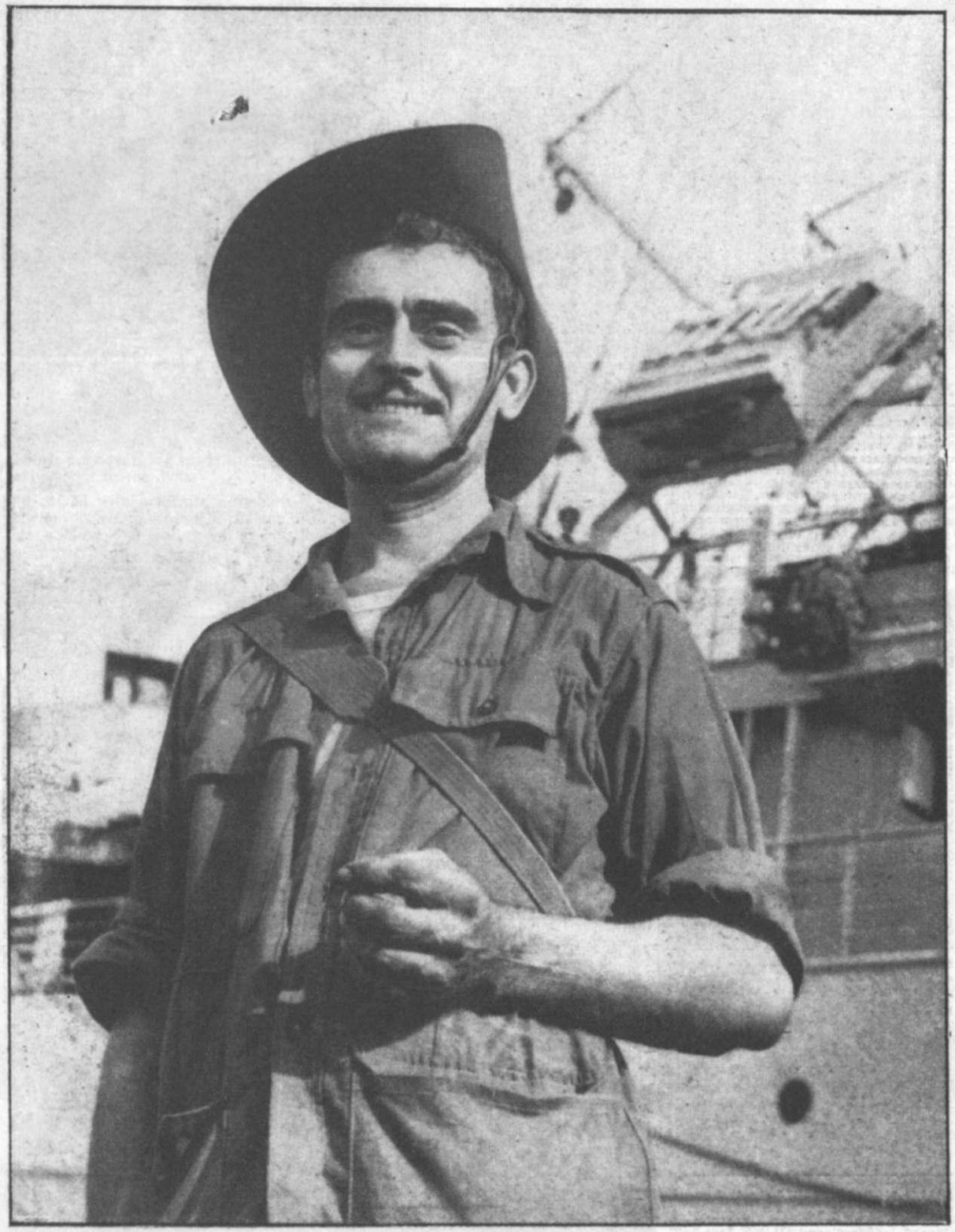
Vol 9 The War Illustrated Nº 219

SIXPENCE

NOVEMBER 9, 1945

and AFTERWARDS



HOMEWARD-BOUND AT SINGAPORE after three-and-a-half years of captivity, this British corporal was one of 40,000 Allied P.O.W. and internees evacuated from the Malayan port by the end of September 1945. On arrival at their destination—Liverpool or Southampton—each ex-P.O.W. is dispatched on leave within forty-eight hours, after a medical inspection and a combined Intelligence and Casualty interrogation. See also illus. page 434.

Photo, British Official

Edited by Sir John Hammerton

NO. 220 WILL BE PUBLISHED FRIDAY, NOVEMBER 23

Trouble Flares Up in Java and Indo-China

AT SAIGON, capital of French Indo-China, Annamite prisoners and civil servants listened attentively to Col. W. G. Cass, a British intelligence officer (1, standing, back to camera), after Allied capture of the prison on October 3, 1945, when he told them they must give up their arms and that order would be restored by the Gurkhas. The rebels surrendered rifles and revolvers without incident. In the city's public gardens (2) sailors from French warships helped to man hurriedly erected barricades.

INDONESIAN NATIONALISTS checked up on captured Japanese arms (3) in S. Java and inspected an armoured car taken from the Japs (4). Two days after Japan's unconditional surrender on August 14, 1945, "President" Soekarno, with Japanese support, proclaimed the "Indonesian Republican Government," and called on all workers to strike against Dutch re-occupation of the island. See also story in page 441.

Photos, Associated Press

This Holland Needs Our Help

By GODFREY WINN

As a gesture of admiration for our sorely tried Dutch allies, we gladly reprint in "The War Illustrated" this brilliant article, slightly abridged, whose author generously gave all publishing rights to the Help Holland Council. We have remitted a substantial sum to their Fund in recognition of Mr. Godfrey Winn's action.—Editor.

As the Dakota swung in along the coast an echo from one's pre-war consciousness suddenly returned. It is a beautiful sight, someone had reiterated, to fly low over the Dutch bulb farms in the spring. But this was the autumn, this was the aftermath of war, and staring down through the slits in the side of the aircraft it was difficult to be sure which was the sea, which the land, flooded and ravaged when, a year ago, the dykes, which normally protect the island of Walcheren, were busted wide open in three crucial places by the R.A.F.

Did human beings really live here once? Harvest their crops, give birth, grow old? Somewhere beneath that apparently solid sheet of water? And then, as I peered more closely, my angle of vision changed, and I seemed to be staring now into a vast mirror, in which was reflected, not the outline of our aircraft, but the shape of farmsteads, and whole village streets, submerged and crystallized beneath the flood.

If it makes an extraordinary picture from the air, it is equally unforgettable, though rather less spectacular, from the eye-level of the human beings who lost all their possessions last winter, and now huddle together, on the nearest dry land, refugees within their own little island kingdom. You find them at Middelburg, the beauty of whose famous town-hall has been only partially damaged by bombing, and in Vere, where desperate efforts are now being made to stem one of the breaches in the dyke.

In Vere I talked with a farmer who had nothing left but some photographs of the considerable holding that had been in his family for generations. They invited us into their borrowed kitchen. The wife wore the traditional white cap, her husband in his dark corduroys had a face that Hals would have delighted to paint. What is it that the younger boy peers at so eagerly in his brother's hand as he lounges by the door? A cigarette. And what is it in the centre of the table that the two little girls, with the prominent eyes of the half-starved, stare at with such wonder? A tin of cocoa.

The farmer, Jacobus David Gideonse, was saying: "We do not hold any grudge against the British for the dyke. It was necessary." *It was necessary.* I heard that phrase a hundred times during my visit. Even in The Hague, where there are large wastes of damage, caused by British bombing; and again, in Arnhem, where after the avalanche suddenly descended from the skies, and this pretty, harmless town became a battlefield, they had the bitterer aftermath of seeing those of their houses which were still standing stripped and pillaged. I have been to Arnhem and seen whole roads of houses without a stick of furniture between them.

Who Will Pay for Allied Damage?

So one began to understand what Total Occupation has meant for a country whose sufferings have been too little publicized, if that is the right word to use. One began to understand why there were so many gaps between the tramlines in Amsterdam—"last winter they tore up the wood blocks for fuel and the floors of their houses, both here and in Rotterdam, even the lavatory doors"—and why, when we went to pick up a guide for a few hours, his small son clung to the car handle, and wept bitterly. The only cars the boy had known belonged to the enemy. If such a car arrived at your door and your father left with strangers, you never saw him again. But those were the only tears I witnessed. I heard no whining, no demanding, no expressions of self-pity: I saw no holding out of hands, even for cigarettes.

Just over the border into Germany much of the domestic loot was taken. It is still there today. And the Dutch ask naturally: when is it to be returned? That question and one other were constantly on their lips. Who is going to pay—especially for *Allied* damage? For instance, that farmer at Vere asked, not unreasonably, from whom would he—and all the others—receive compensation? "First they said the Germans would pay; then it was the British; now no one seems to know."

Even Rusty Nails are Precious

In any case, astronomical sums in a vague future mean less—so much less—than a ploughshare in your hand this very minute. The men are coming back from incarceration in Germany to find their families in districts near the Maas living in chicken-coops. They want to start rebuilding at once, and they are helpless because in whole villages the Germans have not left a single hammer behind. (On the waterfront at Rotterdam I watched a port official, with idle time on his hands, searching among the rusty rubble for nails.) While the dearth of all agricultural instruments is so acute, film "galas" are held in aid of the peasants. Admittance is with a novel coin. A tool. A spanner. A pair of pliers even. A rake.

"Is soap, then, rationed in your country?" (Their own ration, I discovered—after three years of no soap at all—is for two months one half of what we receive each month.) I got tired of answering such questions, and exasperated, too, until I came to the realization that in the whole of Holland is not to be found a single English newspaper, review, or recently published book on sale. This, in contrast with Brussels and Paris, where the kiosks are piled high with news from England. Yet many more ordinary people in Holland speak our tongue . . . and would like to think our way still, if they only knew what way it was.

The new decree, recalling the old currency, was being received everywhere I went by all classes of the community with satisfaction, and, indeed, acclamation. The honest will have nothing to fear, while those who sought greedily to benefit by the scarcities of Occupation are struck off the pay-roll at last. It is thought that there will be many prosecutions but many more secret bonfires.

You can clean up your currency, but that does not fill your shops with goods. I walked through the square at Breda, and was almost deceived by a giant cheese—a beautiful example of modern plastic art. Only the flowers are real, the flower shops piled with outsize blooms of gladioli, and huge waxy dahlias, possessing all the colour that the pale ghosts of passers-by lack. While the final irony was that the flowers were so cheap that everywhere we drove we saw them in the windows . . . the wide windows of the workmen's dwellings, so attractively designed that you could not designate them slums, even down by the docks at Rotterdam, even in Plaretstraat, where I spent an afternoon going from house to house with a young Red Cross doctor.

One remembers the mother, just back from hospital—"starvation made their limbs swell like dropsy" my companion said—holding up her two babies to the open window and the sun. One remembers young Johan Peperzak at No. 55, dressed in a cut-down Canadian uniform, complete with three stripes on the arm (but this wasn't a children's fancy-dress party, this was his only suit); and most of all, one will remember the family that lived on the ground floor at No. 44. Today their living space is one room, because none of the other floors are left. So what will they burn this winter? What clothes will they wear when it is really cold, I thought, fascinated by the two little girls, in one corner, solemnly making dolls' clothes of the last scraps, as clean as their own cotton-thin, much-patched dresses.

As though she could sense what was in one's mind, their mother, with a rough gesture, pulled them towards her, and showed us their bare chests. "You see, no lice, no vermin," she cried with passion and anger. "But they cannot go to school because they have no shoes, no coat. And my eldest daughter cannot take a place as servant, for the same reason." In the ensuing silence my eyes went past the group to the table where, aloof and impersonal, stood yet another vase of white gladioli.

Outside in the street again, I reminded my companion of the stack of garments, collected by the Help Holland Council, that I had seen an hour before being sorted in a warehouse down by the blitzed docks. He explained that first the victims of the Allied battlefields, the refugees from the far-off flooded areas must be fitted out with *something*; and when I was not altogether convinced, he added that so far, despite all that voluntary organizations in Britain and America are doing, only ten per cent of the immediate help needed was being received.

Cabbage and Thin Soup a Luxury

Ten per cent. That is a fact, checked and counterchecked. Here are some more. Last winter one bulb grower alone in Haarlem sold 2,500 tons of bulbs, crocuses for coffee, daffodils and hyacinths for fodder, tulips for human beings. ("They taste like a sweet swede, and aren't bad if fried in fat, if there is any fat.") In Amsterdam last Sunday, at the "best" restaurant, our lunch consisted of cabbage and a little thin soup. I am sorry I cannot offer you any salt, our host said, but I haven't the coupons. Automatically one looked down for a piece of bread to crumble that wasn't there . . .

Mercifully the old city has been spared much bombing, and its serene autumn loveliness was assuaging one's stomach, when suddenly there came into view a sight that is all too common today in liberated countries. One more hotel turned into an Allied leave centre, and there in the window, guzzling away, were a frieze of happy warriors, tackling the Sunday joint, piling their plates, and spreading several pats of butter on their bread. I know now why from time to time respectable citizens long to throw a brick through the window. What must be the feelings of those who pass that way every day and always lunch off cabbage!

As you approached the Rijks, you saw them in a queue a quarter of a mile long it seemed, waiting in their shabby Sunday best for their meal. At last there is space for another batch inside, and now, too tired to stand any more, they flop down on the rows of benches in the improvised gallery, where on the walls all the Rembrandts in Holland—salvaged from their hiding-places in the sand-dunes—are gathered together today for the first time under the same roof. It is good to have that as one's final memory.

What We Escaped in 1940

By MAJ.-GENERAL
SIR CHARLES GWYNN
K.C.B., D.S.O.

IF the Germans in the autumn of 1940 had attempted to put into operation their "Sea Lion" plan for the invasion of England, what prospects of success would it have had? There are, I think, two hypothetical situations worth consideration if we are to judge our capacity at that time to meet the threat; namely, those that would have arisen: (*a*) had the R.A.F. failed to win the Battle of Britain, (*b*) if, having lost the Battle of Britain, the Germans had still persisted in their plan—as for a time seems to have been their intention.

Our own subsequent experience of amphibious operations, to some extent at least, enables us to judge what the chances of German success in either case would have been. We must frankly admit that our land forces were quite inadequate either to repel an assault on the beaches or to deal with the enemy successfully after he had made a landing—provided he could have maintained his sea communications. We have since seen how even the strongest coast defences have failed to repel assault by determined troops, and how forces immensely more powerful than we then possessed proved incapable of dealing with invading armies that had once secured a footing.

WE now know that against the 39 well-equipped and war-trained divisions the enemy intended to land on our shores we could have opposed only one fully-trained and equipped Canadian Division and another partially trained. There were, of course, also coast defence units, the Home Guard and British troops in process of training and re-equipment, but for lack of transport and equipment these would have been incapable of concentrated action or large-scale manœuvres. There was also a complete lack of armour, whereas the Germans proposed to deploy six panzer and three motorized divisions in their first assault.

With such disparity of force it is evident that no solid resistance would have been practicable once a landing had been effected. The enemy's plans for advance inland have, therefore, little interest. The utmost the defence could have hoped to achieve would have been to cause casualties, to delay the advance and possibly to deal with airborne landings; but unfortunately there was no strategic reserve available with which to take advantage of time gained or depletion of the enemy's resources.

CUT-AND-DRIED Plans for Assault on Our East and South Coasts

Yet the formation of the Home Guard, and the spirit of determination displayed, combined with an element of bluff, had their effects. The enemy was induced to plan his invasion on a scale for which his shipping resources were inadequate, with the result that his invasion armadas would have been cumbersome and ill-protected, offering vulnerable targets to the Navy and R.A.F. on whom—in the absence of adequate land forces—the defence essentially relied.

Briefly, the enemy proposed to attack in two groups on a front of some 160 miles. "A" Group, composed of his 16th and 9th Armies, was assigned the 100-mile frontage between Margate and Portsmouth. The 16th Army, starting from the ports between Ostend and Boulogne inclusive, was to land between Margate and Hastings; the 9th Army starting from Dieppe, Le Havre and Caen, was to land between Brighton and Portsmouth. "B" Group, his 6th Army, starting from Cherbourg after "A" Group had gained a footing, was to land in Weymouth bay.

For the initial assault the two groups were to employ eleven infantry and two mountain divisions, together with a mobile force of

"SEA-LION" was the Nazis' secret code-name ("Seeloewe" in German) for their ill-starred plan for the invasion of our shores, disclosed on September 25, 1945. The map illustrates Sir Charles Gwynn's accompanying analysis. *By courtesy of The Daily Telegraph*

six panzer and three motorized divisions available for rapid exploitation, and there were 17 additional divisions in reserve. On the "A" Group frontage airborne troops were also to be landed, and of course it had been hoped that in the Battle of Britain air superiority would have been gained to cover the operation. If landings had been successful, the capture of airfields would naturally have greatly increased the degree of superiority achieved.

GERMANY'S Misconception of the Problems of the Great Invasion

In view of the immense disparity between the land forces available on either side it is self-evident that the defence of Britain depended, as indeed has always been the case, on preventing the enemy reaching our coasts in force. That is to say, he had to be attacked at his ports of assembly, during the slow process of emerging from them, in passage and while attempting to disembark. It may be noted that if this had successfully broken up "A" Group it is improbable that "B" Group would ever have started.

Formidable as the German invading force obviously was, the whole plan for its employment was vitiated by a misconception of the nature of the problem. The difficulties of overcoming beach defences and of subsequent exploitation seem to have been over-estimated and the size of the force it was thought necessary to employ emphasized the difficulty of providing shipping and craft suitable both for making the passage and effecting the landing. In addition, it clearly increased the difficulties of protecting convoys and of navigating them in an orderly manner.

Comparing the successful amphibious operations of the Allies with the abortive German plan, it is clear that material resources, especially of shipping and suitable landing craft, were the governing factors. Although for defence the Axis powers relied on land forces, the strength of the land force which the Allies employed for the initial landing was kept to the minimum required to gain a substantial footing and within the limits of shipping available. Safety in passage, and as great an element of surprise as could be achieved were essential to initial success, and the later development of the strength of the striking force depended on maintaining the safety of sea communications.

Failure of the Axis defence in each case resulted not from weakness on land, but primarily, from inability to interrupt the passage of the Allied armada on its line of sea communications by air or naval attack.

ROYAL NAVY Could Have Played Havoc With Enemy's Convoys

In the Mediterranean, the Italian Fleet failed to intervene, and the air arm, both there and in Normandy, was mainly used to interfere with landing operations. Perforce in the latter operation the German naval defence was limited to the action of U-boats and mosquito craft, but it sufficed to show the need for powerful protection of convoys. The essential difference to be noted is that whereas the Axis relied mainly on their land forces to resist an actual landing, the British problem was to defeat the invading force in passage by sea and air action.

Since the Royal Navy was never called on to intervene in the Battle of Britain, it is impossible to say definitely how far it would have done so successfully, in spite of the dislocation of its dispositions caused by the loss of French naval co-operation. The defence of Crete does, however, provide on a small scale an analogous situation. There the Navy, although without air protection, successfully broke up all attempts at seaborne landings, compelling the Germans to depend entirely on airborne invasion.

The analogy is worth examination in spite of the difference in scale: first, because the vessels the Germans employed were of much the same order as they would have been forced to employ for an invasion of Britain in 1940; and second, because it revealed the fact that though darkness might provide immunity from air attack to convoys in passage it does not provide immunity from naval attack.

IN view of these considerations let us return to the chances of German success in the two hypothetical situations I suggested:

(*a*) Would failure of the R.A.F. to win the Battle of Britain have left us in a hopeless position to resist invasion? I believe it would not. We may safely presume that failure would not have entailed the complete annihilation of our air defence, but rather the withdrawal of depleted squadrons to bases out of range of the enemy's fighters and fighter-escorted bombers. From these bases they could still have attacked the enemy's shipping as it neared our coast, and during daylight have given some protection to our naval forces. Bombing of enemy embarkation ports by night could still have continued, and the Navy might have played havoc with the enemy's convoys.

(*b*) Once the Battle of Britain had been won and the Navy assured of air protection the abandonment or postponement of the German plan was inevitable. It is, however, interesting to learn from Field-Marshal von Keitel that it was fear of naval action that prompted the decision, presumably because all hope had been lost that the Luftwaffe would be able to prevent that most devastating form of attack from developing.

WHEN BRITAIN WAS HELD BY BLUFF

GENERAL McNAUGHTON, who commanded the Canadian forces in Britain threw further light, in a speech at Detroit in October 1945, on Britain's plight during the days of threatened invasion in 1940.

"With great truth," he said, "Britain was held largely by bluff. We searched ancient manuscripts in the old Bodleian library at Oxford for the formula for Greek fire used in 1100 to rout the Russian Fleet at Constantinople.

"Even the guns, which dated back to the era preceding the South African War, which had been placed in store by the thrifty Admiralty, were taken out and pressed into use, mounted on commercial vehicles of sorts, with boiler plates for armour."

Passing the Time with Our Army of the Rhine

BERLIN'S "BLACK MARKET" in the famous Tiergarten was raided by German police and British military police on October 14, 1945, when some 2,000 arrests, including over 100 Russian officers and men, were made. A British tank (1, foreground) dominated the proceedings. A B.A.O.R. major examined the papers of Wehrmacht youths about to be demobilized at Staaken, near Berlin (2). Quiet backwater of the Ilmenau at Luneburg provided some of our men (3) with the chance of a "bite." Official notices, in English, French, German and Polish, have to be carefully studied (4) for day-to-day instructions.

Photos, Crystone, Planet News

How the Barham was Lost

By
FRANCIS E. McMURTRIE

IT is practically four years since the battleship Barham was lost, yet a full official account of the disaster has still to appear. In the Admiralty account of naval operations from April 1941 to January 1943, entitled The Mediterranean Fleet, there is no more than a bare reference to "the loss of the battleship Barham, torpedoed by a U-boat on the 25th November."

Named after the Admiral who was First Lord in the year of Trafalgar, H.M.S. Barham was launched from the yard of John Brown & Co., Ltd., at Clydebank, on the last day of 1914. At the Battle of Jutland she wore the flag of Rear-Admiral Hugh Evan-Thomas, commanding the Fifth Battle Squadron, and suffered casualties amounting to 26 killed and 37 wounded.

FROM 1919 to 1924 she was flagship of the First Battle Squadron in the Atlantic Fleet, and was then ordered to the Mediterranean. Returning to England in 1927, she rejoined the Mediterranean Fleet a year later. In 1929 she went back to the Atlantic Fleet, from which she was paid off at Portsmouth in December 1930. During the ensuing 2½ years she underwent an extensive refit which considerably altered her appearance. Her original two funnels were replaced by a single massive uptake, but she was never completely rebuilt and modernized, as in the case of three of her sister ships, the Queen Elizabeth, Valiant and Warspite.

FORMIDABLE Fighting Unit Though Speed Reduced by Added Weight

After a couple of years in the Home Fleet the Barham was again sent to the Mediterranean in 1935. Save for two brief interludes in home waters, she continued to serve on that station until the date of her loss. In the victory of Matapan, on March 28, 1941, she played an important part (see illus. page 682, Vol. 6). A ship of 31,000 tons displacement, she was armed with eight 15-in., twelve 6-in. and eight 4-in. guns. Her original speed of 25 knots had been considerably reduced by the additional weights added in the course of 27 years, but she remained a formidable fighting unit, whose loss could ill be spared on the eve of Pearl Harbour.

On November 25, 1941, British light forces had just intercepted an Italian convoy on its passage across the Ionian Sea, bound for Libya. In case the enemy fleet might come out, the Commander-in-Chief, Admiral Sir Andrew Cunningham, deemed it wise to have his battleships at hand to support the cruisers and destroyers. Thus the Queen Elizabeth (flagship of the Commander-in-Chief), Barham (flagship of the Second-in-Command, Vice-Admiral Pridham-Wippell), and Valiant were proceeding at 18 knots through the area between Crete and Cyrenaica, with a few destroyers acting as a screen.

U-BOAT Forced to the Surface as a Result of Violent Explosion

Unfortunately, a skilful U-boat captain contrived to dive beneath the screen unobserved and fire a salvo of torpedoes at the three battleships. According to some accounts these were aimed at the Queen Elizabeth, which was narrowly missed. Three are believed to have hit the Barham simultaneously from a distance of a few hundred yards, producing an explosion so violent as to force the submarine momentarily to the surface. She passed quite close to the Valiant, which hoisted the signal "Submarine astern," but the smoke from the explosion prevented the flags being seen by any but a few.

Within four minutes the Barham sank after a second explosion, that of the after magazine. How many were on board her at the time is not precisely stated, but 859 lost their lives. Others were picked up by the destroyers nearest to the scene of the disaster. A graphic account of the rescue work is given by Lieutenant-Commander Hugh Hodgkinson, D.S.C., R.N., in his book, "Before the Tide Turned," published by Messrs. Harrap (and quoted here by kind permission of the publishers). H.M.S. Hotspur, the destroyer of which he was first-lieutenant, was the closest, so was directed to proceed to the aid of survivors :

"Already the crew were cutting the stowage lines of the rescue nets. All rafts were being man-handled to the side. The whaler was manned, and I sent down the young midshipman to cox her. The Captain had slowed down, and we were nosing into what looked like a London fog, and smelled worse. We passed into and through the thick fog, which had by now drifted to leeward, and suddenly it cleared. Dozens of heads bobbed in the water, far more than I had ever hoped for.

"The Captain steered for a large clump who were clinging to the Barham's mast. I shouted final instructions to the midshipman : 'Go for the far and solitary ones, or those in distress. Leave the rest for us.' Then I lowered the whaler to the waterline and slipped her.

"As soon as we stopped the little bobbing heads moved slowly in towards us and the men were heaved on board. At the same time all our Carley rafts were slipped, and two men from our own crew dived over the side and clambered on board each of the rafts to paddle them out to more distant groups. Each raft had a grass line paid out behind it, so that as soon as it was full we could heave it back at high speed to the ship.

"Each man as he came over the side was black with oil. Bales of cotton waste were brought up from the store to clean them. The whole upper deck became layered with oil, so that one could hardly stand. The sick bay was filling with oil-smeared wounded. The whaler came alongside with men too badly wounded to climb. Neil Robertson stretchers were lowered and the men hoisted out, groaning, by tackles slung over the torpedo davit.

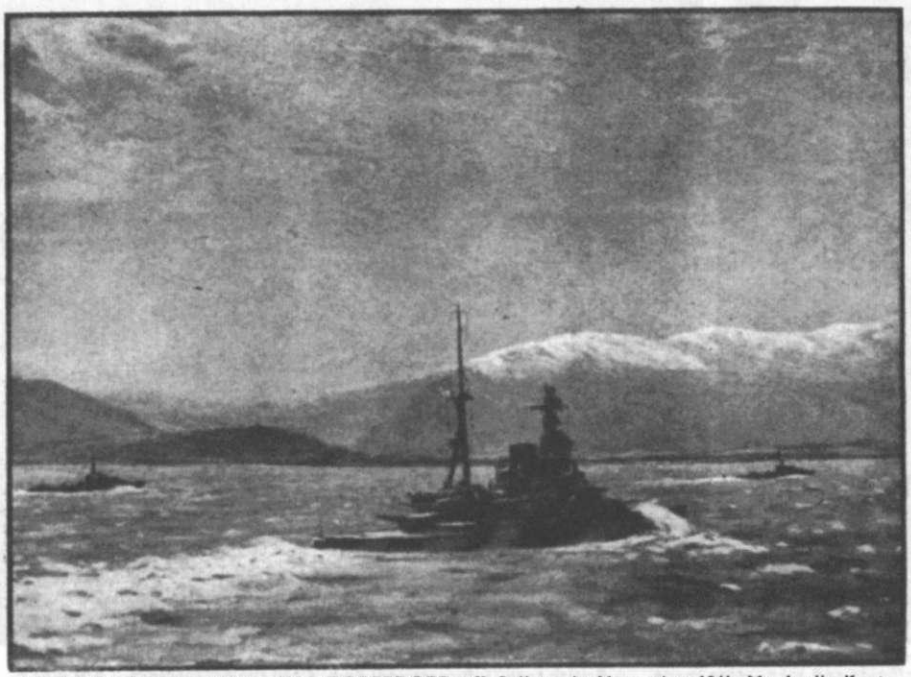
ADMIRAL Holding on to Raft too Thickly Oil-Covered to Recognize

"The Captain, meanwhile, moved the ship slowly towards the group clinging to the mast. Here the oil was thickest. It was solid, and the men could hardly swim or even cling to the great spar. It touched alongside, just by our foremost net, and men started clambering up limply.

"There was a Carley raft there, too, from which men were climbing. One seemed to be in charge, and was exhorting each to make his utmost effort. He was too thickly covered with oil to recognize, and he was swimming by the raft and holding on, to give the weaker ones a chance to lie in the raft. When all were up he started too. He put up an arm to a helping hand. It seemed to be nothing but gold stripe, and I realized who it was. I never expected to receive an admiral on board in such circumstances."

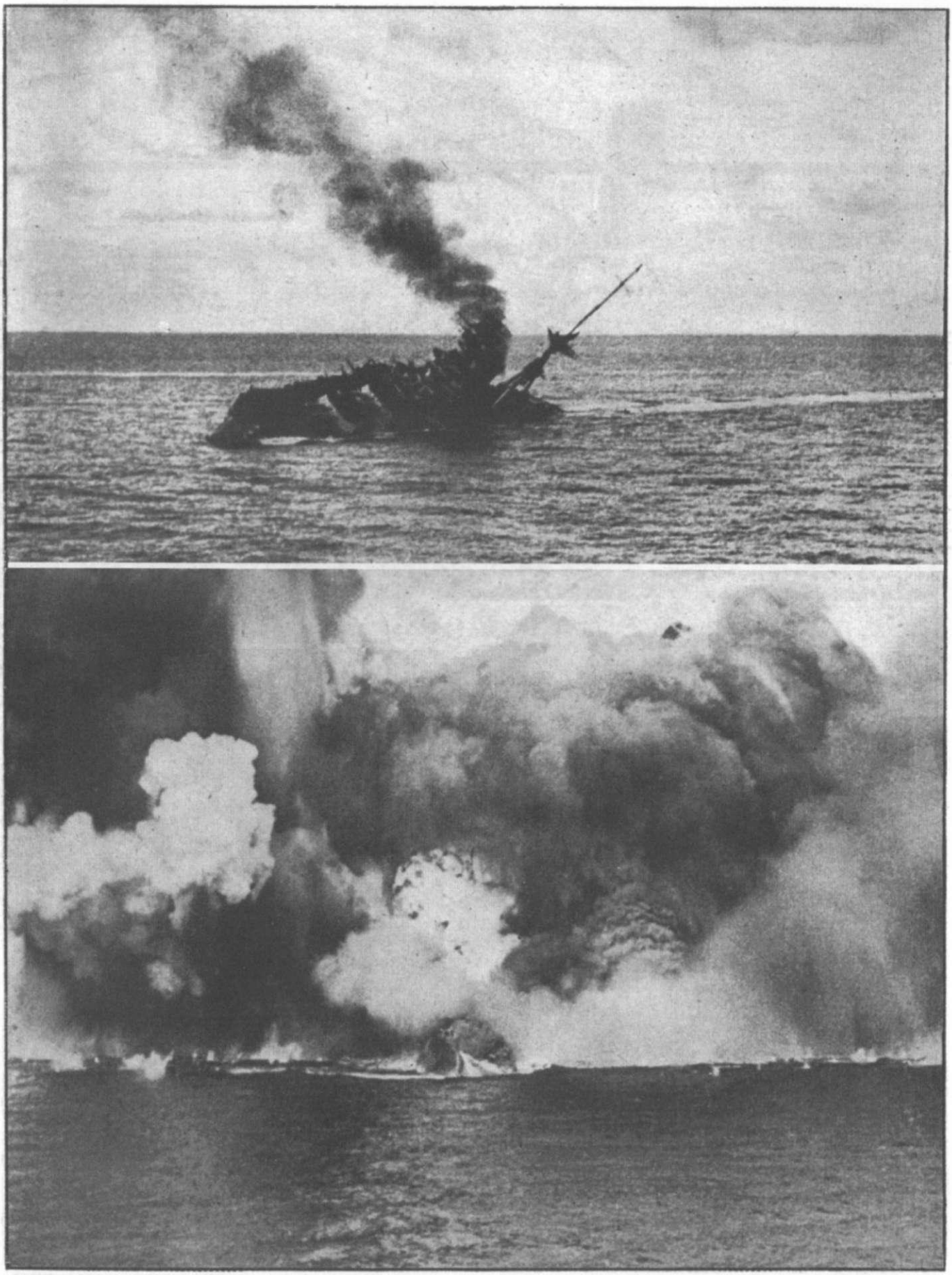
IT was, in fact, the Second-in-Command of the Mediterranean Fleet, now Admiral Sir Henry Pridham-Wippell. He has recently been appointed Commander-in-Chief, Plymouth, as from November 27, 1945—almost four years to the day since he was rescued in the way just described.

Within a fortnight of the loss of the Barham, the battleship Prince of Wales and the battle cruiser Repulse were both sunk by Japanese torpedo planes in the South China Sea ; and a little later the Queen Elizabeth and Valiant were disabled by a daring Italian penetration of Alexandria Harbour in a tiny craft carrying two men. Although so slender a margin of naval strength was left to us in the Mediterranean, the Italians showed no disposition to send their main fleet out to seize control of that sea. Instead, they redoubled their efforts to bomb and starve Malta into subjection ; and Rommel's armies threatened to invade the Nile valley. Tobruk fell in June 1942, but the tide turned at El Alamein in October.



SHORTLY BEFORE SHE WAS TORPEDOED off Sollum, in November 1941, Mr. Leslie Kent, R.B.A., the well-known marine artist, painted this picture of the 27-year-old British battleship H.M.S. Barham as she steamed through the wintry waters of the Aegean with the snow-capped landscape of Crete in the background. The picture is here reproduced by permission of the artist.

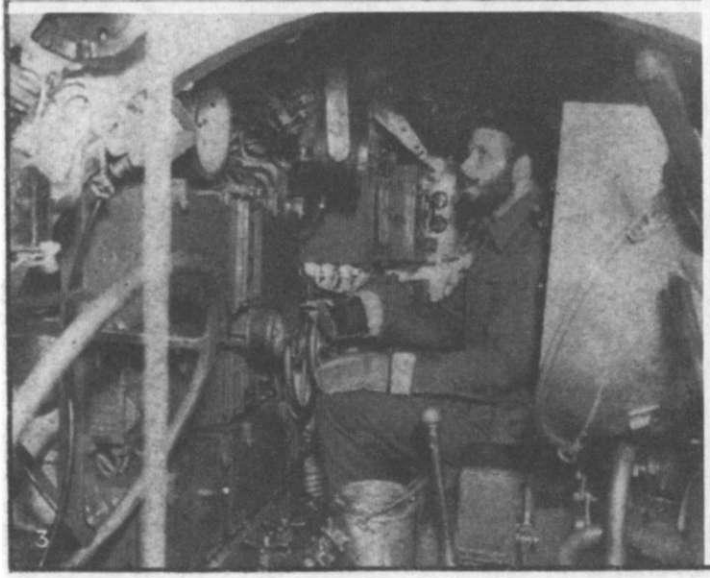
Four Minutes in the Life—and Death—of Barham

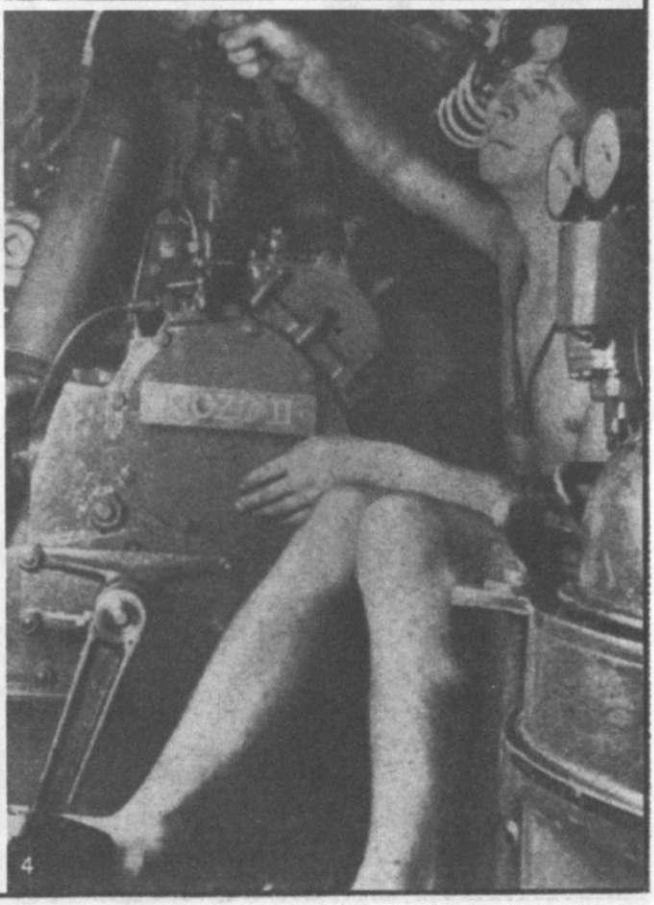


OUR ONLY BATTLESHIP TO BE SUNK AT SEA BY A U-BOAT during the war was the 31,000-ton H.M.S. Barham, intercepted by the U-331 while operating with the Mediterranean Fleet some 200 miles W.N.W. of Alexandria on November 25, 1941. Hit by a salvo of torpedoes, she took a heavy list to port (top). Within four minutes of being struck, between the funnel and after turrets, the after magazine blew up (above) in a thick pall of smoke, causing the deaths of 859 officers and men. See also facing page.

Photos, British Official

The Navy's Midget Submarines at Close Quarters

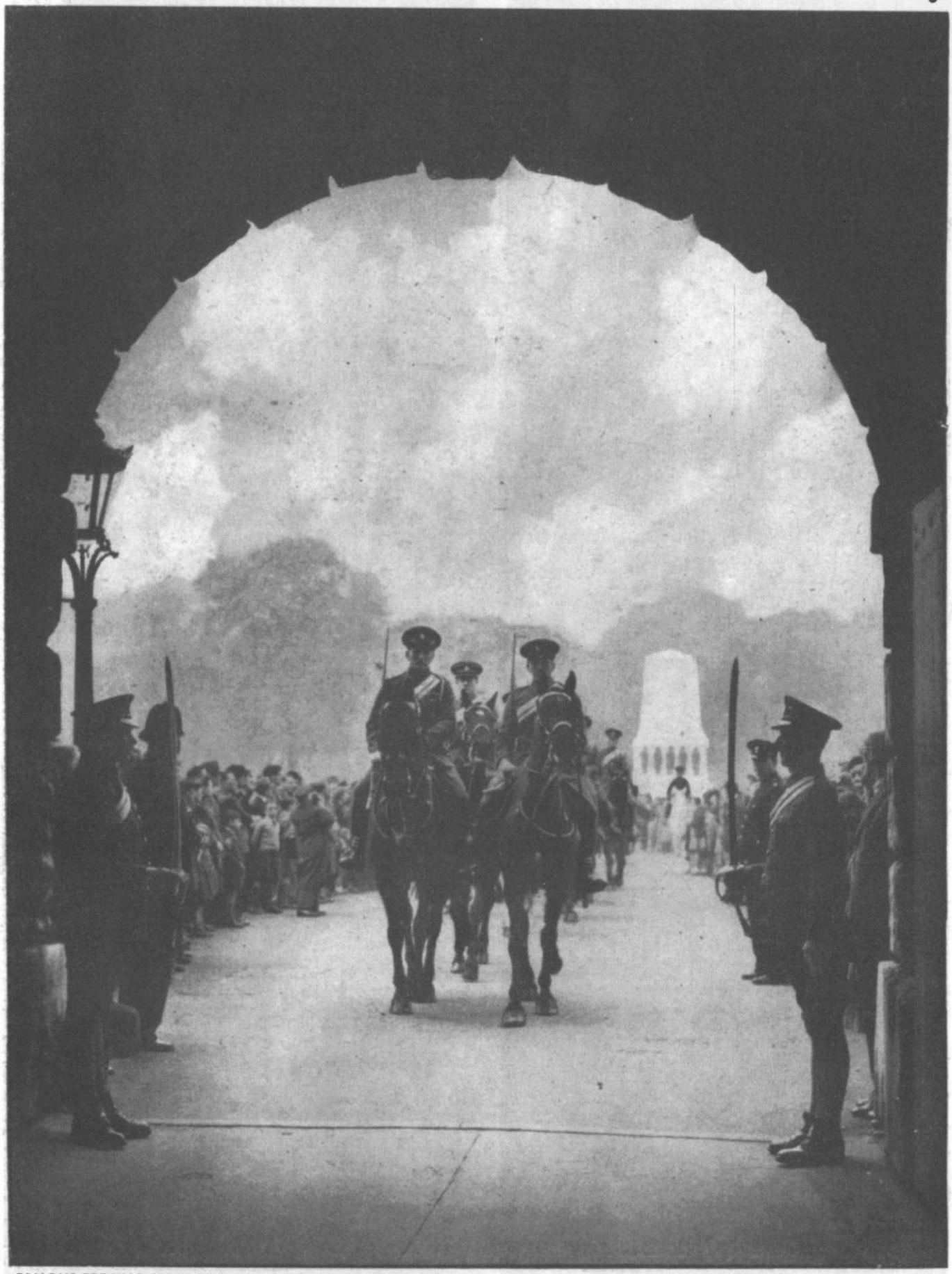




AUSTRALIA'S SYDNEY HARBOUR BRIDGE is the background for a surfaced midget submarine (1), on the occasion of a visit there by her depot-ship H.M.S. Bonaventure (2). On the tiny craft neither the sub-lieutenant operating the hydroplane controls (3) nor stoker (4) has spare elbow-room. Divers from this type of submarine, operating with the Bonaventure, mined the 9,850-ton Jap cruiser Takao in Johore Strait, near Singapore, on July 31, 1943. See also story in page 372 ; and illus. page 649, Vol. 7.

Photos, British Official, Sport & General

Life Guards Again at the Old Familiar Archway



FAMOUS PRE-WAR SPECTACLE of the Life Guards at Whitehall was enjoyed again by Londoners, for the first time in six years, on October 5, 1945. In the long interval the regiment had seen service in Africa, all through the Italian campaign and in Germany. On their reappearance the men wore Service dress, in sombre contrast with previous peacetime splendour. The first contingent is approaching the archway from the Horse Guards Parade—scene of the ceremonial Changing of the Guard—with the Brigade of Guards Memorial in background. PAGE 425 *Photo, Sport & General*

UNSERVICEABLE AIRCRAFT OF THE R.A.F. being stripped for salvage at No. 1 Metal and Produce Recovery Depot (1) set up by the Ministry of Aircraft Production at Oxford. Here, besides heavy bombers which blasted Berlin and the Ruhr, Hurricane and Spitfire veterans of the Battle of Britain are broken up for aluminium, which will later be transformed into cooking utensils for British housewives, many of whom so willingly gave up their old ones to build aircraft in the early days of the war. A crowded corner of "Bombers' Graveyard" (2) with aircraft waiting to be reduced to 28-lb. ingots of metal which are seen (3) being stacked. Between 30,000 and 40,000 tons of scrap lie at the depot, and the store is being added to at the rate of 2,000 tons a week. See also facing page.

Photos, Keystone, The Evening Standard

The Greatest Mopping-Up Operation in History

Swords into ploughshares, Mosquitoes into saucepans : these transformations and many others are now taking place hand-in-hand with the salvaging of equipment and wreckage of war. The scale of operations is vast and millions of pounds are being saved. Organization and results are explained by Capt. MARTIN THORNHILL. See also facing page, and story in page 442.

SALVAGE units which are combing the battlefields are paying huge dividends. Equipment, stores and scrap metal collected in the sweeps eastward from the Normandy fighting zone are estimated to be worth over £14,000,000. The final figure is expected to be enormous.

Before Japan's defeat the salvage picture was a rather different one ; every available ammunition expert of the Ordnance Corps, Royal Engineers and Pioneers, was busily engaged sorting and classifying captured guns and ammunition, of which special categories were oiled and stored in Hamburg for transportation to the Far East. But since the collapse of the Japs the objective has become the slightly more simplified but no less vast one of collecting virtually everything for shipment to the United Kingdom.

Metal of knocked-out tanks, guns, planes and vehicles is quickly carved up by oxy-acetylene cutters, loaded into lorries which then trek to selected Continental ports and pile their valuable cargoes aboard tank-landing craft bound for home. Much salvaged equipment is cleaned, repaired and reissued to our own Forces, or sold to the Dutch or Belgian Governments to help in the equipping of troops to garrison frontier posts or parts of occupied territory.

SALVAGE sales in one recent month included disposal of 20,000 dry batteries, 13 tons of torpedo netting and 27 tons of unserviceable gas capes, while equipment and stores worth £410,000 were recovered and reissued. In the same month the home market benefited to the extent of over 20,000 tons of scrap metal (value £62,000), and £21,000 worth of parachute equipment which went to make silk stockings—so much in request by women at home and now on sale in the shops at controlled prices.

It must be a consoling thought to most of us that if old metal, frying pans railings and so on could be transformed into bombs and Mosquitoes, then these items can, for a great part, be conjured back into saucepans, tables, tools and steel. For months—perhaps years—to come, a large proportion of factory machinery and accommodation will be engaged in rendering-down scrap metal to its original foundations of copper, lead, brass, aluminium, to form the basic constituents of motor-chassis, machine tools, engine bearings, radio apparatus, electrical equipment, telephone cable, ships' propellers, pots, pans and a further diversity of peacetime equipment.

Loot Found in Nazi Rat-Runs

So much for the major instruments of war —or some of them. Quite apart from our own masses of material, there are hundreds of thousands of items accumulated by the German Todt organization and its various groups, which are now passing forward to a legion of valuable functions. There were, too, vast quantities of domestic materials stripped from local homes by the German military commanders to furnish comforts for the personnel of large-scale Boche defences —furniture, cutlery, glassware, stoves, bed linen, pianos, clocks, electric irons, chicken runs, even window-frames and outbuildings. For when these Nazi "rat runs" were overtaken by our men they were found to be fitted with "every modern convenience," all filched from the homes of local inhabitants. Wholesale confiscations had been made from hundreds of hospitals and institutions by regimental headquarters, by individual soldiers, by gauleiters themselves, entrusted with local government. These things have now for the most part been returned to their owners ; an intricate and laborious task.

The 1914–18 war ended with about a million tons of ammunition in hand. The expense of removing hundreds of dumps to a central disposal point proved so costly that break-up plants had to be built on the sites. In the end, converted into scrap metal, the mountains of shells and bombs brought the Government less than £1,000,000. That was better than nothing ; but nobody being able to think of any use for the explosives and propellants which had been extracted, these

GIGANTIC ELECTRO-MAGNET unloads scrap-iron from a wagon and places it in a bin for later transport to the blast furnaces. During the great salvage drive of 1940, eighty per cent of old iron recovered went to make bombs for the R.A.F. *Photo, Topical Press*

were prodigally piled on the beaches of France and Belgium, and burned.

High explosive, which had cost us £100 a ton, simply went up in smoke. There will be a great deal more to dispose of this time, purchased at a higher price, and widely increased technical knowledge is combining with wartime education in salvage to separate the constituents into thousands of tons of valuable fertilizer. For the basis of all explosives is nitrogen ; some contain potash as well, and both are excellent land fertilizers.

BREAKING down of T.N.T. and amatol involves great risk to the lives of those doing it, but the value of the chemical constituents to our worked-out farms is going to prove immense ; fertility of Britain's land is likely to be immensely restored by using this means of resuscitation which lies ready to hand.

These tasks, as well as the reconditioning of thousands of vehicles and stores after collection, are all part of a brilliantly executed scheme. It has meant the retention of highly trained personnel in the R.A.O.C., R.A.S.C. and Pioneers, and none perhaps was better qualified to administer it than the soldier who was appointed to the task. For the Director of Salvage, Brigadier Charles Vere Bennett, O.B.E., R.A.S.C., a one-time high official of the Institute of Mechanical Engineers, was, between the wars, an instructor and administrative officer in Army technical schools. At the beginning of this war he became Assistant Director of Supply and Transport.

The basis of Army salvage is that everything which passes out of effective use by the Army comes within the scope of salvage. The battlefield having been divided into specific areas for ease of administration, it becomes the duty of each military unit to report surplus or waste material in its own zone. To illustrate the efficacy of this decentralizing of duty, as the result of a drive by the Third British Infantry Division for recovery of "jerricans," dumped all over the countryside during battle operations, fifty units in the British Second Army salvaged 110,060 cans in one week, thus saving nearly £50,000 of taxpayers' money. One man alone collected 4,207. (See illus. in page 532, Vol. 8).

"Sifting" the Western Desert

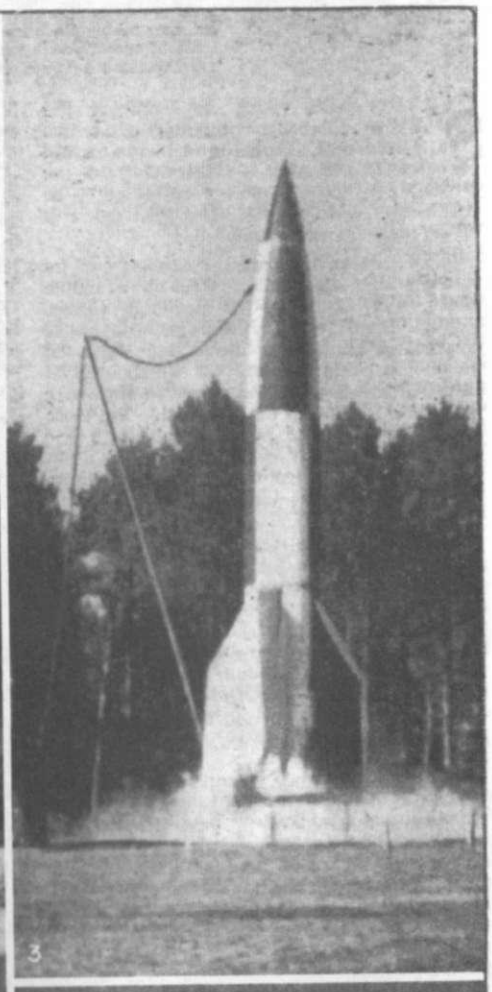
After sorting and classification, any salvage still militarily useful is reissued against special demand. Such other material as is repairable, or otherwise usable, finds its way to the Ministry of Supply. There is a future even for "unusable" matter, such as rusted barbed wire. Priority in this is held by the occupier of the land where it is salvaged, the remainder being sold to local inhabitants or disposed of by public auction.

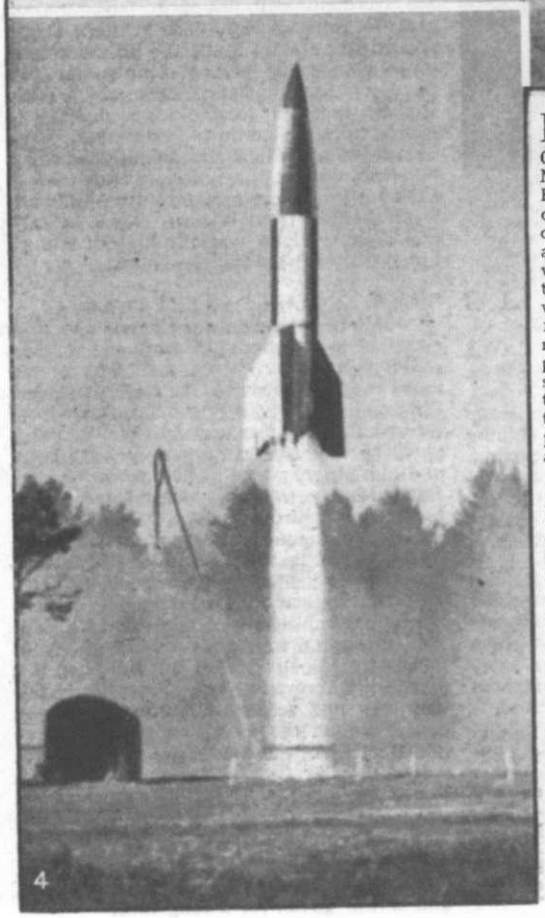
While salvage operations in different areas may be varied to suit local conditions, the general scheme is the same everywhere, and the last chapter of British salvage in France and Germany will doubtless have a good deal in common with what is now taking place in North Africa. The Western Desert is a salvage area of itself, and an example of thoroughness and perfect completion. Nothing has been wasted. Tires which could not be repaired locally were shipped to Britain to be melted down into rubber. Scrap steel made new tanks and aircraft, for which hundreds of tons of magnesium alloy—worth £1,000 a ton—were recovered from old castings. Earlier, from Western Desert salvage, one smelter alone was turning out enough ingots daily to produce ten fighters.

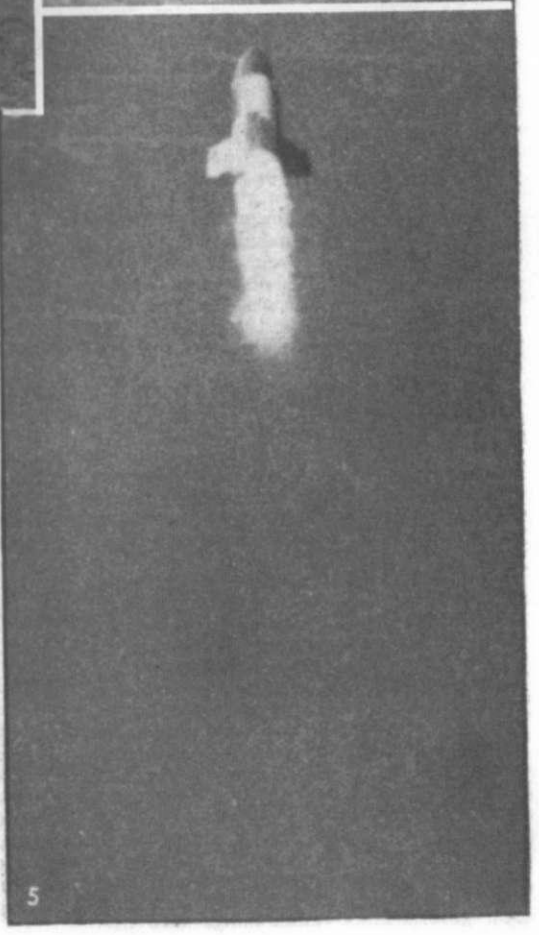
THE Turkish Army and Civil Defence Corps had in use thousands of guns and rifles captured by Montgomery from the Italians. Linen was stripped from the backs of old maps and handed over to the medical services for use in plastic surgery. Boots unfit for repair became leather washers. Wet batteries, sparking plugs and so on were reconditioned, and old battery plates melted down for lead. Four-gallon petrol tins, too badly damaged to be used again, were turned into fly-traps, ration boxes, petrol funnels and trays. Vast quantities of medical stores were captured intact ; even the pills proved useful, rendered down to their chemical components. The sands, once thick with mines along a wide belt stretching westwards for hundreds of miles, have long since been freed of this menace. Only waste material remains in this once vast and active battle zone—and even this is still in the process of sale to Egypt and the folk of the Mediterranean seaboard.

Hundreds of other trappings of battle can be turned, and in fact are being turned, to good account by transforming them into articles of civilian use. For this is the greatest "mopping up" operation in history ; and it will go on for a long time.

Now British Scientists Fire V2s From Germany







ROCKET BOMBS were successfully test-fired from Cuxhaven, Germany, into the North Sea in October 1945 by British scientists and technicians who, during the war, had organized counter-measures against them. So satisfactory were the new guiding devices that one of the rockets fell within three miles of the target, 150 miles distant. The experiments, to test information supplied by the Germans after the surrender, were conducted by the Special Projectile Operations Group (S.P.O.G.), composed of Royal Artillery experts and technicians from the Ministry of Supply.

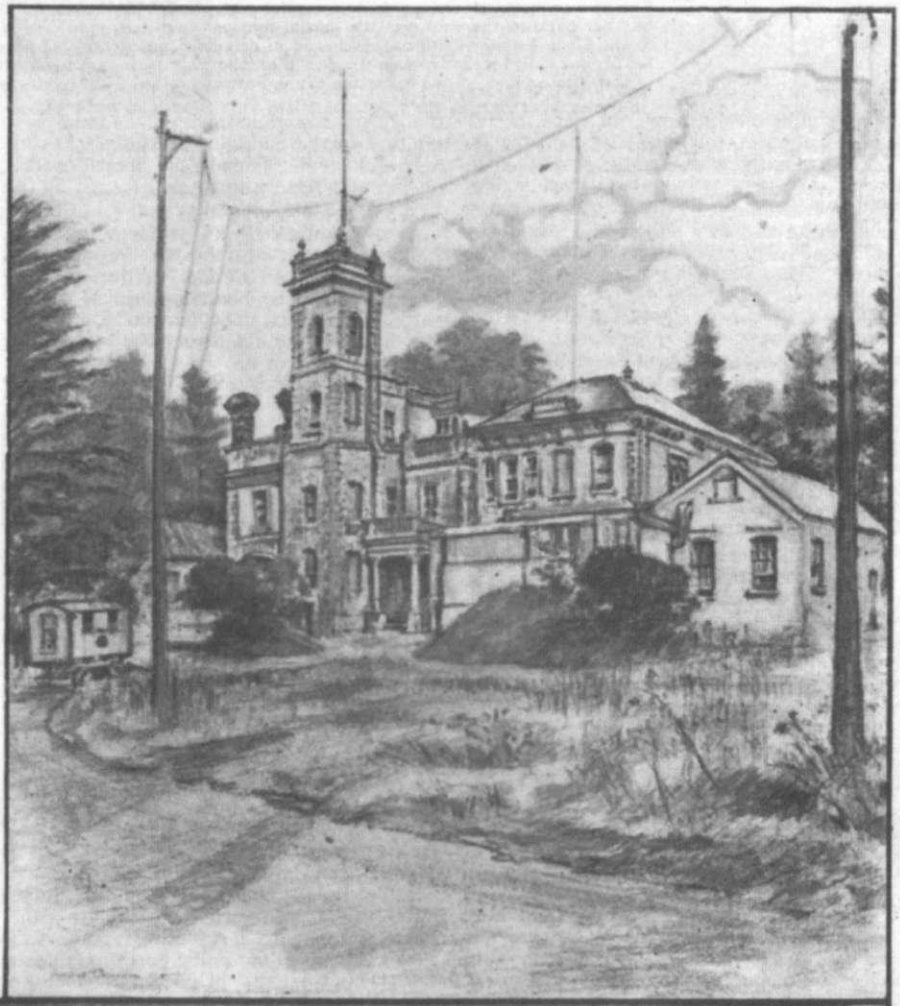
Although over 8,000 German rocket troops were captured during our advance in the Low Countries, together with numerous rocket parts, the Nazis had gone to great lengths to destroy equipment, and no complete rockets could be found. Some parts - as a result of R.A.F. bombing of German production centres—were made in Britain from captured blueprints.

On its six-wheeled trailer, a V2 is about to be towed (1) to the launching site specially constructed by men of the Royal Engineers, where it is seen being elevated (2) to the vertical firing position (3). Up she goes (4), well into the sky (5).

Photos, British Official

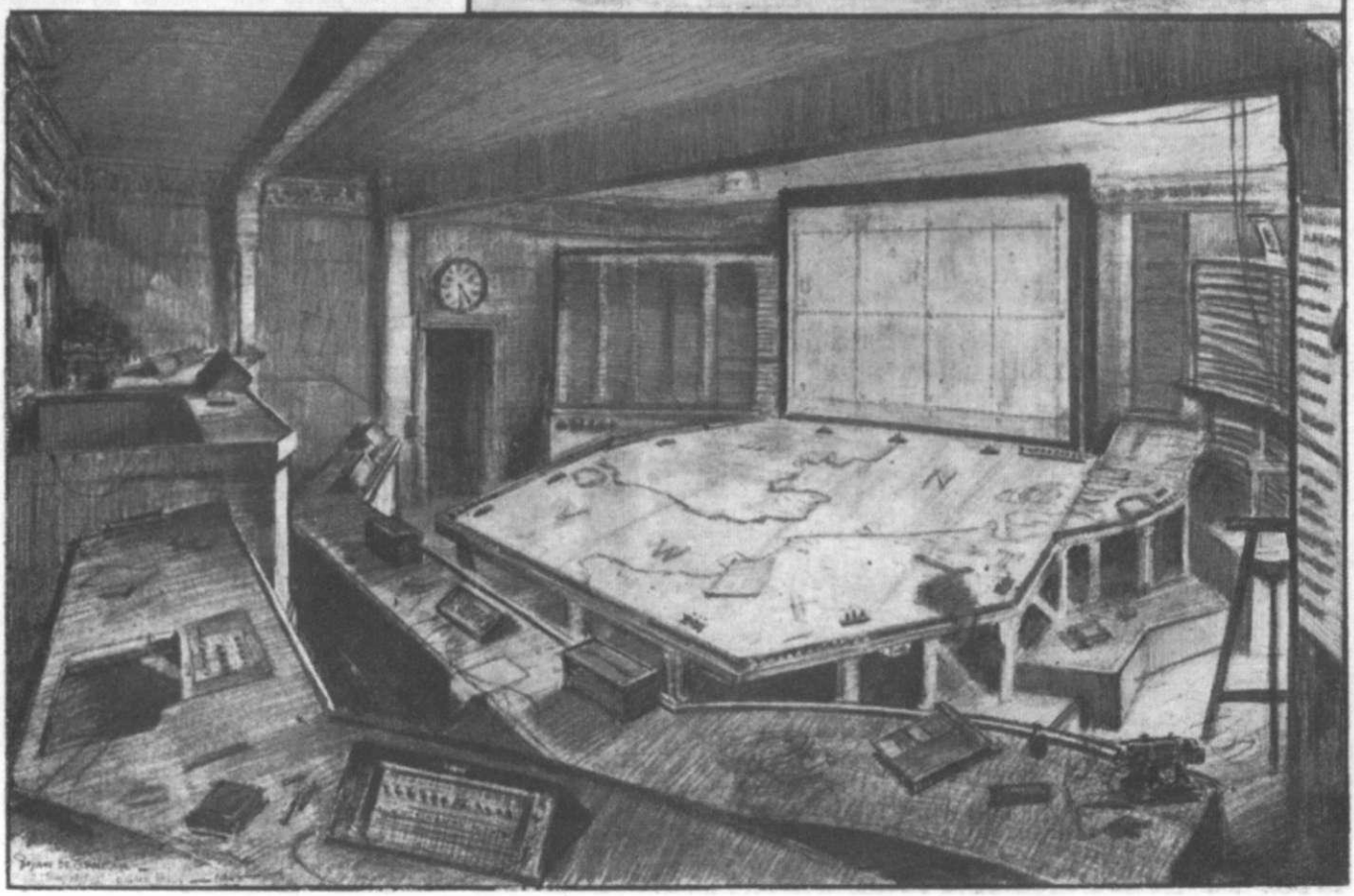
At Biggin Hill 'Where They Won the War'

ON THE WESTERHAM ROAD, "Towerfield" lies almost midway between Bromley Common and the R.A.F. aerodrome at Biggin Hill, on the Kentish Downs. A rambling late-Victorian mansion (right), embowered in grounds well wooded with pine and larch, it is plainly the product of an age of leisure, of peace and plenty. Yet it was from here during what was probably our most critical period that the Battle of Britain (September-October 1940) was largely directed—and largely won—when, in the undying words of Winston Churchill, "Never in the field of human conflict was so much owed by so many to so few." The story is part of our history, with Trafalgar and Waterloo, and it is suggested that this Victorian mansion, now shabby and deserted, should become a national monument, preserved intact for posterity as a visible reminder of Britain's finest hour and of the imperishable glory of the R.A.F.



INSIDE the building, in what was once a sumptuous lounge, is the famous Fighter Command "Ops" Room (below), nerve centre of the Battle of Britain in its most critical stage; from here the defence of London was mainly conducted. Earlier in the Battle, the Luftwaffe bombers had all but wiped out Biggin Hill aerodrome, wrecking its "Ops" Room. By way of hurried stop-gap a village shop was requisitioned, then "Towerfield." Here, in the lounge, was erected the famous six-sided table shown below with its large-scale map of south-eastern England and the Continental approaches—on which counters denoting aircraft were feverishly moved backwards and forwards to indicate the positions of the enemy and those of our fighters opposing them. On the benches around the table sat the Assistant Controller with representatives of the Royal Observer Corps, the Searchlight Section of the A.A. Batteries and the Army, pooling their efforts as one magnificent team. On the dais (left), at a desk, sat the Controller, then Group Captain R. Grice, O.B.E., D.S.C., co-ordinating data flashed through by telephone and planning the campaign—under the Supreme Command of Sir Hugh (now Lord) Dowding, C.-in-C. of Fighter Command. As Richard Dimbleby, B.B.C. commentator, broadcasting from here on September 15, 1945, fifth anniversary of the Battle of Britain, declared, "It is one room in which you could say, 'That is where they won the war.'"

Drawings by Captain Bryan de Grineau by courtesy of The Illustrated London News



When London's Docks Visited the Clyde

One of our most astonishing and successful feats in the countering of the Nazis when Britain had her back to the wall was the partial removal, in the autumn of 1940, of the Port of London to the Clyde Estuary. Official disclosure of details of this great enterprise of "the Port in the Sea" has only recently been made: the following account is compiled from information in the October issue of the Magazine of the Port of London Authority. See also illus. page 166.

AFTER the overthrow of the Low Countries and the fall of France in the early summer of 1940 it was quickly becoming obvious that shipping could make use of London and our other south and east coast ports for very little longer. There was the Luftwaffe. There were the E-boats. There was the magnetic mine. Each and all conspiring to cut us off from world supplies.

A major diversion of shipping to our west coast ports at once suggested itself to the Ministries of Shipping and Transport (later to be combined in the Ministry of War Transport); but it was soon discovered that even working at maximum pressure these ports would be sadly unequal to the vast demands imposed by our ever-growing war-effort. The position indeed seemed grievous. And as the weeks dragged on into late summer it worsened.

Whose was the inspiration we may never know. But it was born. At once plans were put into operation establishing the Clyde Anchorages Emergency Port, a brilliantly-conceived scheme for a vast port at sea in the safely-enclosed waters of the Clyde where British and ocean-bound shipping could anchor, and, without touching land, load and discharge their cargoes overside, with protection afforded by the boom between Dunoon and the Cloch Lighthouse erected at the outbreak of war. Details were worked out with the help of the Port of London Authority's Assistant General Manager, Mr. (now Sir) Robert Letch.

THE Clyde Anchorages scheme went into operation almost immediately after the Port of London received its first heavy air attack on September 7, 1940. Within a few days the first stevedoring unit, consisting of London men and gear, proceeded north. The men were billeted in the Greenock and Gourock districts, and within a month totalled some six hundred. The administration was in the hands of Sir Robert Letch, as Executive, and a small staff loaned by the Port of London Authority.

Exactly a week after that heavy Luftwaffe raid on London's docks, the first ship discharged her cargo at "the Port in the Sea." She was the S.S. Nardana, with a general cargo from India. She was the first of the many. The date was September 14, 1940—a memorable day in the history of this island.

DISTRIBUTION of cargo to various ultimate destinations involved a highly-skilled degree of planning, for there were no quays or sheds available for housing goods pending instructions. Before each cargo rose from the ship's hold it was necessary to decide its route of consignment. As often happened, cargoes were transhipped direct from ocean vessel into coasters awaiting to hurry them to our home ports.

This scheme had many advantages, including the saving of precious time, and the risks to the cargoes were spread over a much larger number of vessels. Cargoes needed for delivery by rail or road were discharged into a special fleet of power barges, dumb barges and Dutch schuyts, and sailed ashore. Here they were unloaded at emergency wharves—some of them exclusively for passenger use in normal times—by means of small electric cranes and trucks brought all the way from London. The stevedoring was carried out by the London dockers.

In all, some 300 Thames dumb (towed) barges were dispatched to the Clyde, either towed round the coast or carried on the decks of freighters. A fleet of punts was taken by road, as far as the port of Glasgow and there launched. Under the guidance of a lighterage foreman loaned by the P.L.A., local hands from Greenock were trained in the task of handling these craft. And they did it thoroughly. Most of the powered barges were Thames Estuary auxiliary sailing barges, which were moved to the Clyde and operated there by their normal crews. Because of weather conditions they did not make use of their sails but relied on their auxiliary engines. Many of them had, earlier in the year, performed gallant service at Dunkirk.

Almost every kind of cargo was unloaded at the Clyde Anchorages. Included among them was bulk grain, and for this the Port acquired portable bucket elevators, operated by an expert P.L.A. grain machinist. When supplies from the U.S. began streaming in, large tonnages of explosives were discharged at remote anchorages in the neighbouring lochs. An even trickier task was the unloading of vast quantities of tanks, tracked and other vehicles and landing craft in sections, with the help of a powerful floating crane.

Discharging Damaged Ships

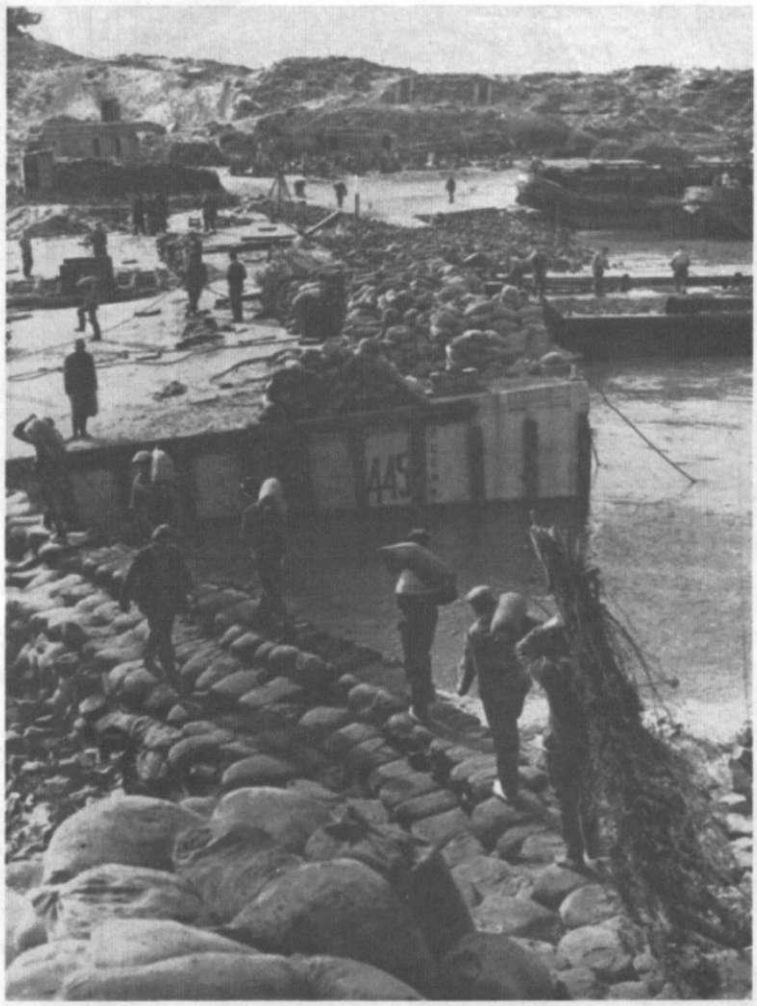
Rarely was the work of a straightforward nature. And there were always vagaries of the weather to contend with. Frequently ships which had been severely damaged by enemy action while at sea had to be discharged from flooded holds so that repairs could be effected. Of these shattered craft some were so heavily waterlogged that they arrived with too deep a draft to enter any normal port, and thus had to be discharged in deep-water anchorages.

On one occasion men and gear from the Anchorages made an overland journey of some 250 miles to render assistance to the S.S. Staffordshire which, limping badly, had managed to enter Loch Ewe, well north of the Clyde. Another ship carried a cargo of oranges, from Spain, among which Nazi agents had placed bombs timed to explode en voyage—which they did. The whole cargo, on arrival in the Clyde, had to be shot loose into barges, each case being opened on board under the supervision of bomb disposal experts. Another frequent task was the re-stowing of deck cargoes which had shifted during rough weather in the North Atlantic or on the Murmansk route to Russia.

WITH the lessening of the Luftwaffe's attacks on southern and eastern ports, British shipping slowly returned to some thing like normal. But the work of the Clyde Anchorages went on, as a vast terminal for the larger troopships. After America's entry into the war, five of the world's biggest passenger liners—Queen Mary, Queen Elizabeth, Aquitania, Ile de France and Nieuw Amsterdam—operated a regular ferry service between the U.S. and the Clyde Anchorages, transporting hundreds of thousands of American troops for service in Europe. These swift vessels sailed singly, and in addition smaller types of troopships continuously sailed in and out of the "Port" in convoy. The Port authorities grappled skilfully with the prodigious tasks of ferrying the troops ashore and entraining them besides refuelling and storing the ships themselves.

It was from the Clyde, too, that a large part of the fleet engaged in the North Africa landings embarked; from here, also, they sailed in large numbers for Normandy, following D-Day, with the equipment necessary for exploiting the invasion. In all, from September 1940 to its discontinuance at the end of August 1945, the Clyde Emergency Port discharged and loaded 1,885 ships. The cargo discharged and loaded amounted to 2,056,833 tons; while military equipment, stores, mails, and so on discharged and loaded numbered 6,032,872 packages.

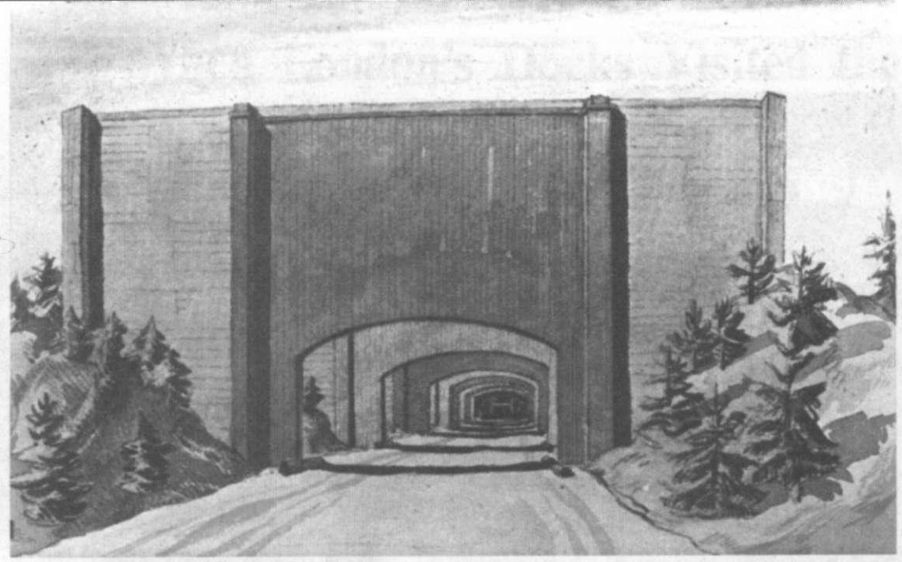
HOW LONDON DOCKS LOOKED TO THE LUFTWAFFE, revealed in a photograph taken from a Nazi bomber during a daylight raid in the Battle of Britain; Surrey Commercial Docks and the West India and Millwall systems are enclosed in the loop of the Thames known as the Isle of Dogs. Tower Bridge is at the top left. It was the threat of heavy damage to these docks that brought into being the Clyde Anchorages Emergency Port. *Photo, British Official*

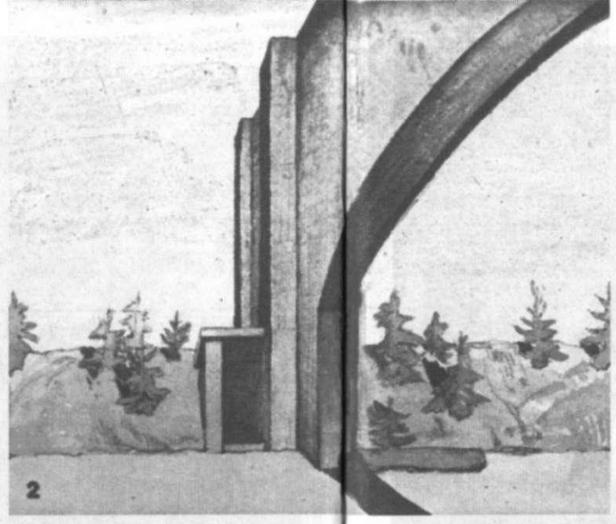


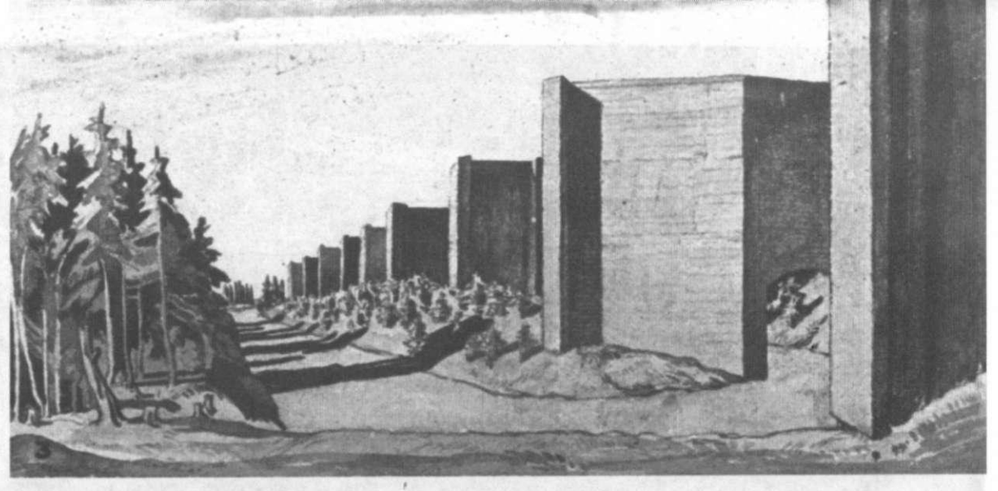
Battle to Save War-Famous Dutch Island

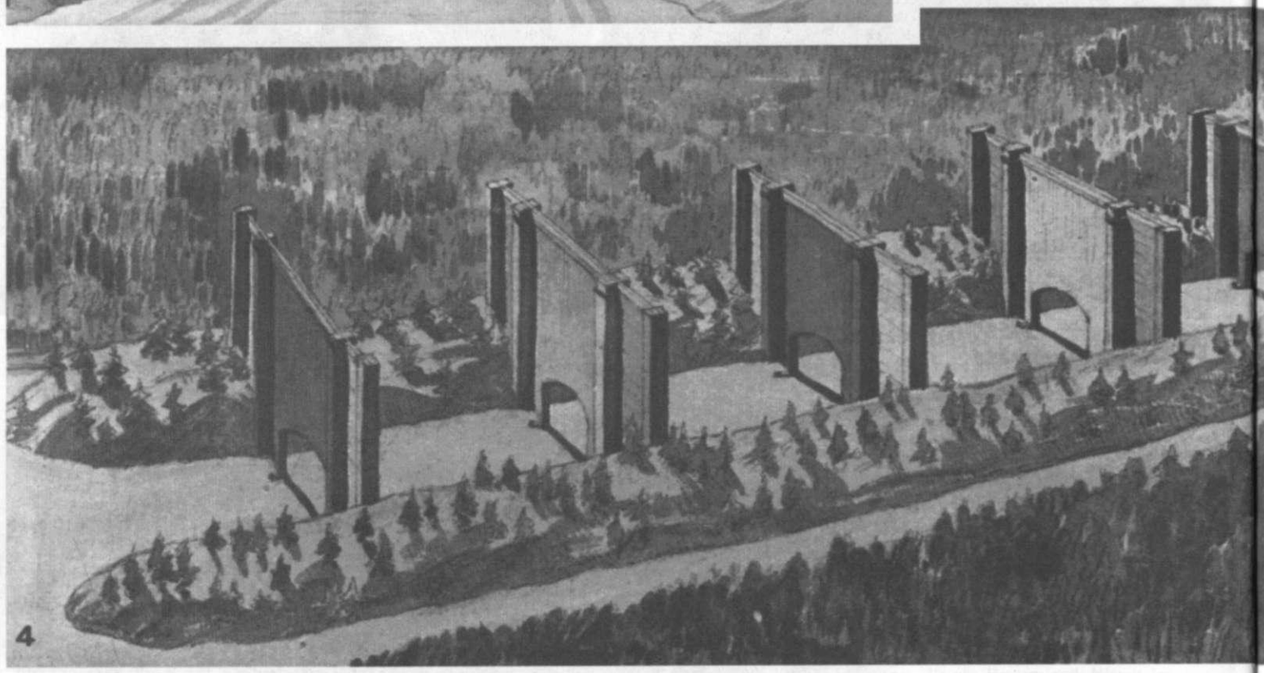
To flood the German gun-sites on the island of Walcheren R.A.F. bombers on October 3, 1944, at high tide, tore great gaps in the dyke that prevented the sea from submerging the low-lying land. The waters then surged over most of Walcheren, and the breach at Westkapelle was used by Royal Marine Commandos as the gateway for their attack on November 1. (See pages 463–466, Vol. 8).

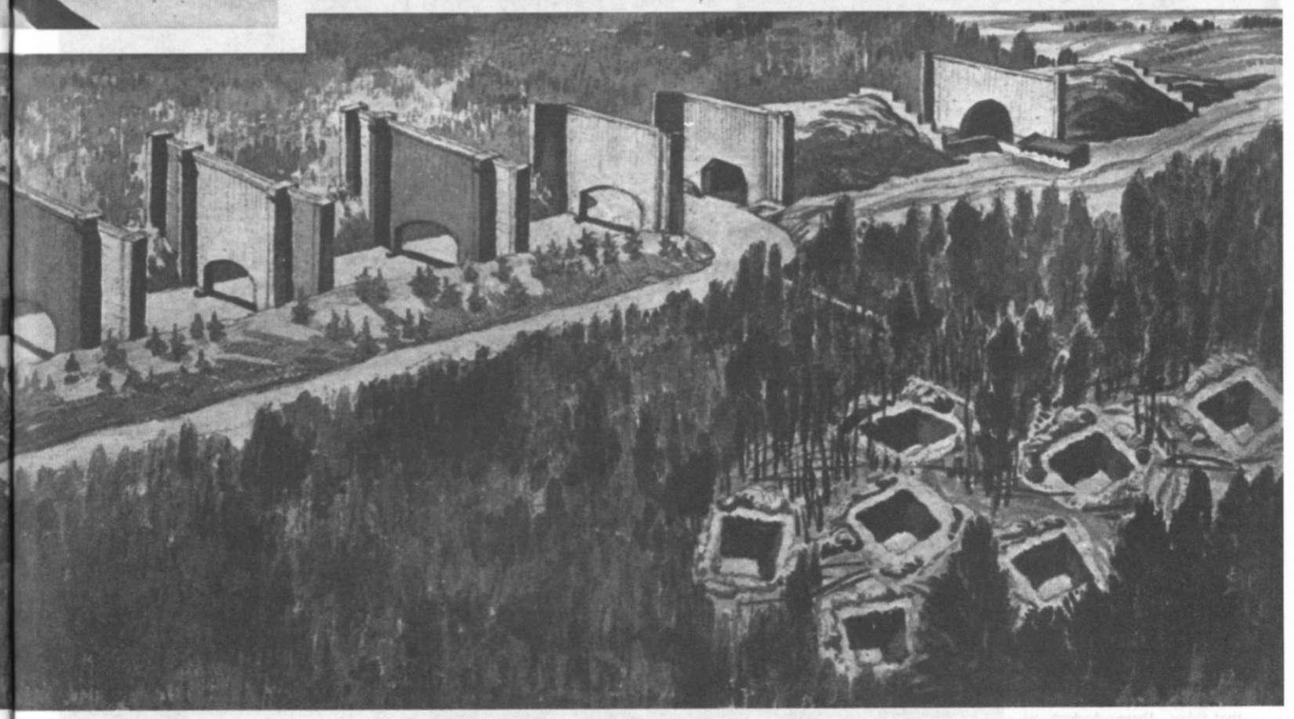
Now, with the aid of British equipment, Dutch workers are rebuilding the blasted dykes; by October 3, 1945, the first of the gaps had been sealed. Filled sandbags, and faggots for foundations, are used (top left). Nearly closed (top right), with the sea on the left; flood-water on the opposite side stretches away for many miles. Through the last few yards swirls the rising tide (right), but at next low-water the sandbag barrier will be completed. When the dykes are restored, Mulberry Harbour sections will be joined together to form an outer sea-wall. (See also illus. page 386).











Where Nazi Tank Crews Trained in Norway—

In August 1943 it was reported that the Germans were clearing tracts of some of Norway's finest forests at Trandum, south of the Hurdal Lake, in order to establish practice sites for artillery and tanks which were to fire at speed. In one locality German pioneers with mechanically operated saws had cut down all the timber on a front of more than 500 yards. Now a British officer, **Major Kenneth Hare-Scott**, recently stationed near those woods, 35 miles north of Oslo, has described specially for THE WAR ILLUSTRATED the peculiar methods adopted for the training of the tank crews in street-fighting tactics; the exclusive illustrations are by **Driver Walter Bell**.

There is a sinister implication in the discovery of many graves in the immediate vicinity a discovery which resulted in Trandum becoming one of the horror-places of Norway; for there took place frequent executions of resistance workers from Oslo, and Russians from neighbouring labour camps Erected in great secrecy by the Germans, a stone's throw from the rough graves, is the ingeniously contrived tank range shown in detail above.

Entering the first of the archways or screens (1), massively constructed of concrete and timber (shown in section at 2), tank drivers were confronted by a long vista of the semblance of a built-up area, with all its (assumed) possibilities of frequent ambushes and the concomitants of street-fighting, as indicated by the side view (3). A straight run is provided through the remaining screens (4) towards the distant target. It is presumed that the purpose of the two tunnels at the far end of the range was to confine the blast of the shells fired by each speeding tank as it neared the completion of the course.

The targets? It is considered likely by Norwegians now in the vicinity that these had been provided by bodies found in the adjacent graves, a few of which are seen at the extreme right (4). These each contained more than twenty corpses, toppled in carelessly at all angles. It may be that these unfortunates were the only people, other than the Germans, who knew the real purpose of the erections. Many of the graves have now been uncovered and the bodies taken to Oslo for identification; some bore no trace of wounds, and it has been inferred that these were buried alive—tied to the dead. The work of disinterring the bodies was carried out by quislings, under compulsion, and Quisling himself was compelled to witness the gruesome proceedings.

OTHER places in Norway specially associated with Nazi brutality are Greni, a concentration camp to which members of the resistance movement were sent for confinement. Victoria Terrasa and Mollargaten 19 in Oslo are places where the initial "grilling" of victims took place, whilst an island near Oslo possessed a gallows and torturer's implements behind high walls, well screened from public view. Nobody quite knows what happened on this island, but evidence points to it being another centre of human suffering and extermination. Greni has now changed its name to Ellabu, and today houses a large number of quislings awaiting trial.

As in other countries, the Gestapo in Norway was ruthless in its methods. The quislings would be paid for a denunciation, and the victims selected by them were invariably ordinary citizens against whom some personal grudge may have existed but who had committed no crime against the occupying forces. The grilling and torture would continue for twelve or thirteen hours, until the unfortunate individual, completely exhausted, probably not only "confessed" to some misdeed he had not committed, but implicated friends as innocent as himself. In some cases genuine workers in the resistance movement would be tracked down by the Gestapo, but their bravery in maintaining silence in face of torture completely baffled the efforts of the Germans to find the nerve centre of one of the strongest and most effective underground movements in Europe.

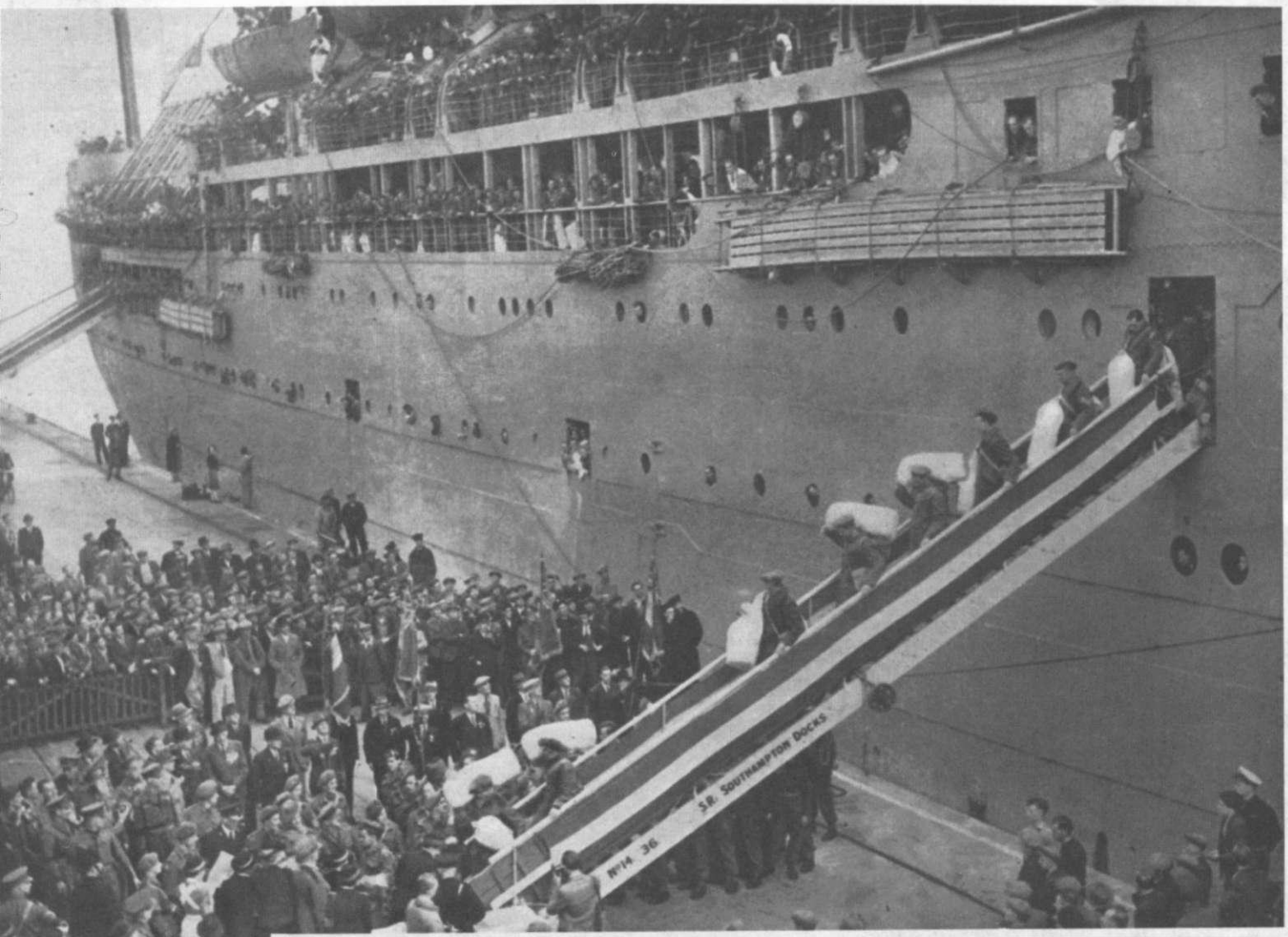
—Victims Were Tumbled into Nameless Graves

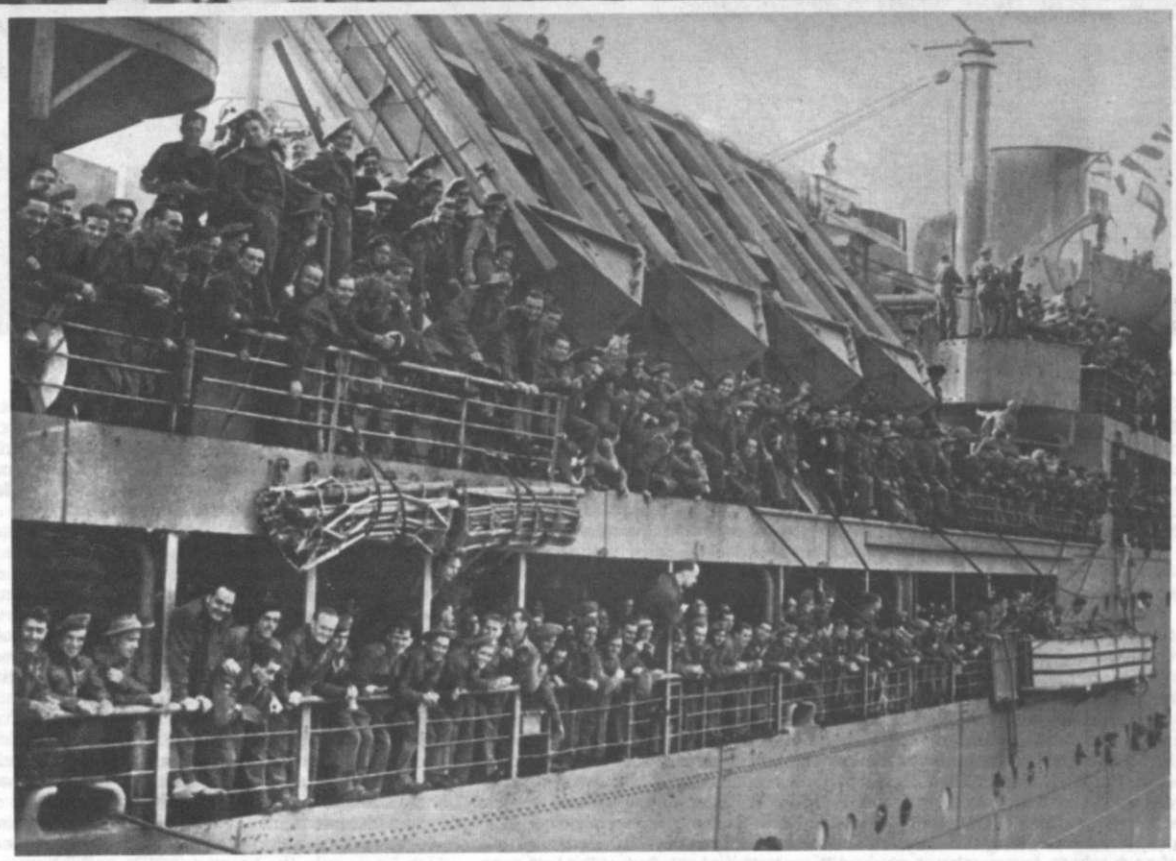
ONE Norwegian woman whose husband played a leading part in the resistance and was eventually tracked down, told me (writes Major Kenneth Hare-Scott) of a visit of the Gestapo to their house. The husband had received warning the same evening and left the country for Sweden. The Gestapo made her pack all his possessions into suitcases, and mounting a machine-gun at the foot of the parents' sleeping child's bed, they warned her that if she omitted to pack a single item they would shoot the child out of hand.

It was the constant fear of detection or denunciation by a quisling which made the five years of German occupation as much of a nerve-racking experience as we in England ever suffered through aerial bombardment. The Norwegians learned to do as little work as possible during the occupation, and now they admit that they find it difficult to complete a full working day without feeling that something is wrong! They fed from what they could buy on the Black Market—fats were scarce, they had no milk or butter at all during the last year of German occupation, and there is little doubt that had the conditions continued tuberculosis would have been rife. Farmers were compelled to supply all the needs of the invader, who admittedly paid—but with notes "wet with the printer's ink," as one farmer described it. Worthless currency flooded the country and had little or no purchasing power—for there was nothing to buy.

A GREAT area of devastation is in the extreme north—Finmark (see page 749, Vol. 8). There the Germans burned and looted everything—towns, villages, boats, forests and communications—in the belief that should the Russians advance into northern Norway, as at one time seemed likely, the Nazis would be able to pin the responsibility for the destruction upon Marshal Stalin's troops. Wisely the Russians stopped short of Finmark, and yet another German bluff failed to come off. But that in no way mitigated serious loss to the Norwegians.

Recently I attended the first trial by court-martial of a German officer accused of murdering a Russian ex-prisoner. The court, composed of American, British and Norwegian officers, sat for several days and a very able defence was put forward for the accused. He was, however, convicted and sentenced to be shot. One left the court-room (the dining-room of a hotel in Lillehamar), where scores of Norwegians had been sentenced to death on trumped-up charges after trials lasting a few minutes, with the impression that no court-martial could have been conducted more fairly or with more consideration for every aspect of the prisoner's defence and character . . . Justice has returned to a brave little country which knew only the basest injustice and inhumanities during five weary years.





First Home by Sea from Far East

October 7, 1945, will remain a red-letter date for 1,134 ex-prisoners of war, and their friends and relatives, for on that day there docked at Southampton the P. and O. liner Corfu bringing home the first seaborne batch of P.O.W. from captivity in the Far East. General Sir Ronald Adam, Adjutant-General, went on board and read to them a message of welcome from the King and Queen; and a copy, typed on Buckingham Palace notepaper and bearing the King's signature, was given to each. Lining the rails (right), eager to step ashore, the men were prepared for a rousing reception—and were not disappointed. The scene on the quayside as they disembarked (above). Each as he left the ship was presented with cigarettes, chocolate and other gifts and a free telegram form on which to send a message home.

Our Lightships in the War

By
HAMILTON FYFE

WHICH of the German crimes committed during the Second Great War will be considered the most dastardly, the least forgivable? In the opinion of Sir Geoffrey Callender the attacks on lightships were "one of the world's foulest crimes, which no tears of penitence can ever wash away, no apologies ever condone." That is not altogether an unprejudiced view, for Sir Geoffrey is Director of the National Maritime Museum at Greenwich, and is specially concerned with shipping and the seamen who work the ships.

But no one is likely to disagree with his statement that when the Nazis decided, as part of their campaign against the British Merchant Navy, to bomb lightships, they proclaimed themselves "the foes of all humanity, the enemies of all who in a spirit of self-negation untiringly worked, not for profit or gain, not for prestige or promotion, but for the good of all mankind."

That is how he describes the crews of the lightships in his introduction to a book written by one who was in the service of the Trinity House—Looming Lights, by George G. Carter (Constable, 8s. 6d.)—and who had "personal experience of the atrocities committed against the lightships by the champions of the Crooked Cross." But before coming to these, let us ask and try to answer the query: Why the Trinity House?

This was a Corporation which received in 1514 a charter from King Henry VIII, who laid upon it the duty of taking care that the Thames pilots, who brought vessels up to the Port of London from the Nore, should be competent and trustworthy. Evidently they hadn't all been, or this supervision would not have been necessary.

That Dangerous Old Enemy the Nore

About a century after this institution was founded a proposal was made that it should put a light on the dangerous sandbank called the Nore, so that masters of ships should know where they were and should not attempt the passage up the Thames without taking on a pilot acquainted with all its difficulties. Why it took a hundred years for this eminently sensible plan to be carried out does not emerge. Probably it was the "can't-be-done" school which stood in the way. No vessel, it was argued, could be kept in position during storms. And that certainly was an obstacle; for when, in the 18th century, a lightship was moored at the Nore it broke away more than once and narrowly escaped being completely wrecked. However, by this time the need for a light was generally admitted and perseverance brought its reward. By the beginning of the 19th century six more had been established off our coast; now there are between forty and fifty.

Some of these have electric lights, on the same principle as those of lighthouses; others rely on vaporized oil burners. Every half-hour a clock has to be wound to keep the lantern revolving. The beams, which are level and steady, thanks to an ingenious mechanism, are all different, so that masters can tell which lightship they are near. Some "flash," that is, go on and off at regular intervals; some vary the colour of the beam. In foggy weather they give warning of danger by means of very powerful sirens.

THE first time Mr. Carter heard one of these "deafening, ear-splitting" contrivances give its "hellish shriek" (as Sir Geoffrey Callender puts it) he felt it very badly. One of his shipmates noticed his distress and told him not to worry about the horn too much—"you'll get used to it."

Here he stopped as the two blasts from the siren interrupted him. "Always let that feller have his say, you'll save a lot of breath and patience." And thus I learned to regulate my conversation to the intervals between the blasts and rarely was I interrupted, though conversation was usually cut down to a minimum when we were "blasting."

Actually he missed the "hellish" din when the weather cleared and it was no longer needed. He found the silence positively uncanny. For the first night he could not sleep, but "lay in my hammock, listening to the silence."

IN the first war-winter the Nore lightship in which Mr. Carter then served was often in danger from mines that had broken loose. Some were British, some German. It was said that ours became harmless after they were adrift, but "how could one tell the difference? They all had horns projecting from them." One day a black speck was spotted through binoculars a long way ahead.

EAST DUDGEON LIGHTSHIP, whose machine-gunned lantern turret is shown here, was one of those heavily attacked by the Luftwaffe in 1940. The story is told in the book reviewed in this page. *Photo, Fox*

As it came nearer, its horns could be seen. The alarm was given. "Jump out, lads! There's a ——— great mine right dead ahead and the tide is fetching it down fast!"

Very quickly all the crew were on deck with as much of their property as they could carry. The sea was running too high for a boat to be lowered. The skipper seized the huge iron tiller and shoved the helm hard over, hoping to sheer the ship away from the mine. But the current drove it under the bows and "petrified, the men waited for the blast that would tear them and their ship to atoms." Imagine their relief when it reappeared—with one of its horns badly bent—and drifted harmlessly astern.

As well as these underwater perils there were frequently planes overhead, but the old hands didn't worry about them.

The lightships weren't touched in the last war, they said; and so we remained smugly complacent in our safety—poor fools that we were. How little we understood the Hun!

The first lightship to be attacked was the Smith's Knoll, in January 1940. Then came the assaults on the East Dudgeon. Aircraft swooped down, bombing and machine-gunning. The lantern was shattered, the rail and part of the ship's side blown away, the rigging too. Master and crew managed to scramble into the lifeboat and lay a short distance astern. When the planes had gone and they saw their ship was still afloat, they pulled back to her in a flurry of snow and climbed aboard. Scarcely had they done so when another attack developed. They jumped into the lifeboat again and made for the shore.

It was not far distant and they knew the Norfolk coast, but they were numbed by the icy wind and spray, and it was dawn before they saw land. It seemed close, but between them and the shore was a sandbank; on this the huge waves were breaking heavily. Their boat was overturned, they were flung into the breakers. Crawling slowly, painfully, in the last stages of exhaustion, they tried to reach the top of the beach. One by one they had to give up the effort. Only one survivor reached safety. He called back from time to time, but "one by one the voices ceased to answer, for the men were lying dead along the sand."

Unarmed and Prey to Any Attack

After this, the lightshipmen knew what to expect. "Lightships whose traditions of life-saving had made them inviolate through the ages were being deliberately attacked." They were too important for their lights to be allowed to go out, if this could possibly be avoided. So there the men stopped, "absolutely unarmed, prey to anything that cared to sink or board us. Many of us had visions of an E-boat dropping alongside and the whole crew of us driven aboard under the threat of a sub-machine-gun, and finally thrown into a concentration camp somewhere in Germany."

They saw any number of Stukas, "hordes of them," and hardly any of our own (they were too busy elsewhere). The Stukas were usually looking for convoys, but one day they turned their attention to the East Sand Head lightship. This was an old one and the crew had fortunately been taken out. Another, which had its crew on board, was very badly damaged—sides pierced by cannon shell and armour-piercing bullets, boats shot into a mass of splinters; but by good luck not one of the ship's company was injured.

Next came the tragedy of the South Folkestone Gate lightship. The crew were at dinner when six bombers started the attack. A rush was made for the deck. Here the Master was clearing the falls of the lifeboat, with blood running from a gash on his face. Two men who had been with him had been blown to pieces. Half the bulwarks were gone, the deck-house steel-plating was all crumpled up. Somehow the survivors manoeuvred the boat away, most of them with wounds; they were picked up by a speedboat and hurried to hospital on shore.

THE North Sand lightship, to which Mr. Carter was transferred, had now become one of the only three left in the approaches to the Thames. They had narrow escapes, all of them. One day 25 Dorniers rained bombs all round the North Sand, but by what seemed a miracle she was not hit. "The bombs fell only a few feet either side of us. In fact, the only stretch of water they didn't strike was where we floated." The Master radio-ed cheerfully, "Heavily bombed, but still afloat undamaged. No casualties." He could have stayed on, but the authorities felt it was time to withdraw the crews both of North Sand and South Sand. They had been "taking it" long enough.

So the coastwise lights went out. But, wrote Mr. Carter, ending his book: "They are immortal. The hour will surely come when once again they will sweep the darkening sky, pointing, guiding, warning; symbols of hope, deliverance and justice to humanity." His prediction was right. That hour has come.

Now It Can Be Told!

'GHOST' FORTS SENT TO CRASH ON HELIGOLAND

WHILE the flying-bombs and rockets were crashing on London we were using an 11-ton V-weapon against the Germans. And the Germans who survived this weapon never knew how it worked. I can now reveal (writes D. Gould, in the London Evening News) that "ghost" bombers, piloted by radio control and loaded with eleven tons of bombs, were being aimed across the North Sea to crash on the heavily defended German island of Heligoland.

The Germans were mystified by the fact that they flew through the heaviest flak and crashed without anybody baling out first. The planes were old Flying Fortresses. One of them caused a scare right across England from the Wash to Liverpool when it got off course and headed west instead of east. Because the Germans were "in the dark" about it when Flying Fortress Melancholy Baby went the wrong way in September 1944 everybody in the know had to tell a story which would not give the secret away.

So the explanation was offered that "George," the automatic pilot, had become awkward, that Gremlins had taken over the control of the plane after the crew had baled out, and had piloted it safely if a little erratically across England and Eire and out over the Atlantic! Because of the death load it carried, sirens were sounded in every town and village along the plane's course.

It went from the King's Lynn area, south of the Wash, in a north-westerly direction to Derby, over Spalding and Melton Mowbray, then to Merseyside, passing over Congleton, Middlewich, Northwich and Runcorn.

It gave Liverpool its first air raid warning for 18 months, and R.A.F. officials who knew the danger were appalled to see it circle the city twice before setting off in a westerly direction again, causing an alert in Bangor as it went.

Fighters went up to pursue "Baby," who was flying perfectly at more than 250 m.p.h., and they were ready to shoot it down into the sea. At one time it looked as if it would outstrip its pursuers, and a warning was flashed to America that the bomber was heading on a course which might carry it right across the Atlantic. But finally R.A.F. fighters caught it and shot it down into the Atlantic. These "ghost" bombers were taken into the air and set on their course by two pilots who baled out while still over land.

HUMAN MINESWEEPERS AND DIVERS OF THE R.N.

THAT the 50,000-ton liner Europa was recently able to make safe passage out of Bremen was largely due to the efforts of the Royal Navy's "human minesweepers," divers specially trained to find and render safe mines which could not be swept by normal methods. Since D-Day these teams of naval diving and mine-disposal experts, known as "P" Parties, often working in appalling conditions and submerged in mud, have cleared every major port from Cherbourg to Bremen.

It was at Bremen that the greatest test of their courage and skill was made. Some 60 mines had been laid by the enemy before the surrender. Their location was unknown, and the opening of this vital port was entirely dependent on these mine-clearance experts. Diving and mining history was made when a "P" Party officer, Lieut. George Gosse, R.A.N.V.R., of Adelaide, Australia, first rendered safe a little-known enemy "oyster" mine underwater at Bremen.

"I had seen bits of one before, but this was quite different from the one I had seen," Lieut. Gosse said afterwards. "The mine was resting on a body—there was plenty of rubbish and bodies in the harbour—but I didn't worry about this. It was very dark and I had to work by sense of touch in about two feet of mud. It was quite cold, too, and a little lonely. I took the primer off and brought the mine unto the surface. It was like taking a sparking plug out of a car. You can do it in the dark if you know what you are looking for!"

BIRTH of the "P" Parties came in the Mediterranean campaign, when charges ready for laying in deep-water berths were discovered at Bizerta. It was found that the enemy could lay mines with a delayed action of up to 80 days—an unexpected threat to port liberation which had to be overcome. It was decided that divers trained as human minesweepers were the reply to this menace.

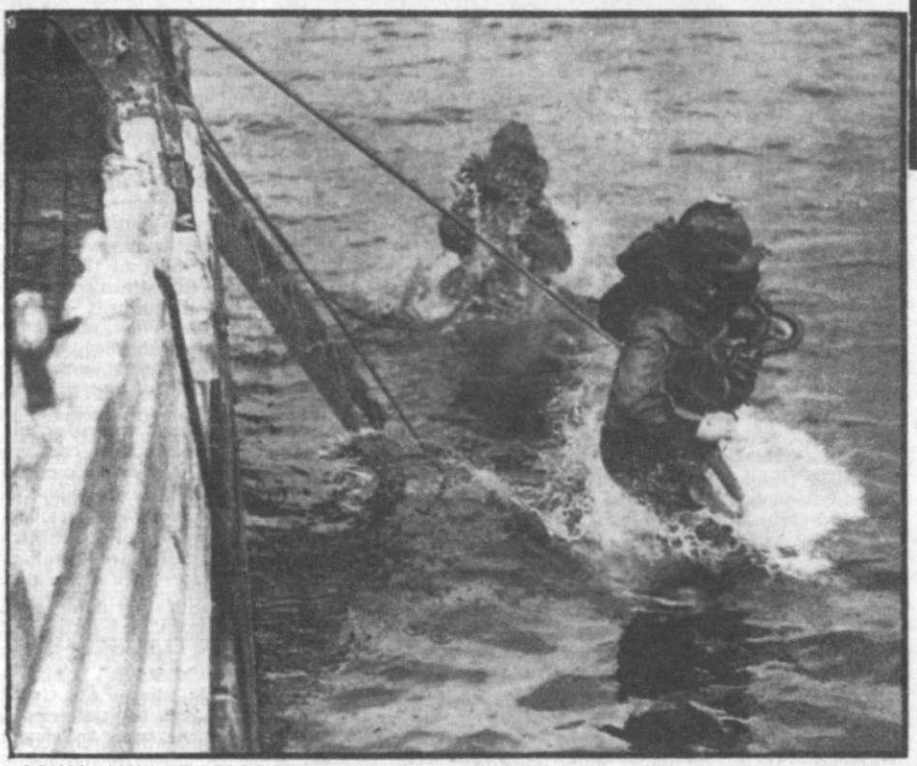
Accordingly, the Admiralty Experimental Diving Unit of Tolworth, Surrey, under Commander W. O. Shelford, R.N., of Ryde, Isle of Wight, working with the Unit's Senior Medical Officer, Surgeon Lieut.-Cmdr. K. W. Donald, D.S.C., R.N., of London, designed a special shallow-water diving suit, based on

the Unit's previous research on human torpedoes and midget submarines. The suit embodied the first operational application of the revolutionary principle of mixture-breathing in a closed circuit, a self-contained apparatus giving a mixture of enriched air supplied from portable bottles.

TWO "P" Parties, each of about 40 ratings and two officers, all volunteers, were recruited, and by D-Day were ready. Personnel were trained in mine and bomb recognition, in avoiding booby-traps, in the use of automatic weapons, in field work and in tying bends and hitches blindfold—a preparation for their hazardous underwater work.

A search technique was developed, using guiding ropes anchored in parallel patterns over the search area. By crawling along these ropes over the harbour bed divers could complete an intensive search, often relying merely on their sense of touch. Route marches, P.T. and swimming training maintained vital standards of physical fitness. The parties went into action soon after D-Day, one at Caen to clear the Caen Canal and the port, the other to open the port of Cherbourg.

Three more British parties and one Dutch party were speedily trained and were soon



ROYAL NAVY "P" PARTIES did much of their training in Brixham Harbour, where an "undersea museum" was laid down to familiarize them with enemy mines, obstacles and booby-traps. Attached to ropes, two trainees (above) enter the water; another, fully accoutred (right), is ready to go down. *Photos, The Evening Standard*

moving along the European coast hard on the heels of the liberation armies. Cherbourg, Ouistreham, Caen, Boulogne, Calais, Brest, Dieppe, Le Havre, and Rouen were all cleared and new types of ground mines, demolition charges and jettisoned enemy gear were successfully recovered.

APPALLING conditions of ice and thick mud, often over the divers' heads, were encountered; but the work, vital to speed European liberation, never stopped. The clearance of Antwerp was completed in record time, and by the end of December, Terneuzen, Zeebrugge, the south Beveland Canal and Flushing were free. By this time parties were completely mobile, with four 3-ton trucks and one 10-cwt. van. Despite the dangers of having to breathe oxygen under pressure and the continual menace of underwater explosions, strict observance of standing orders enabled the gigantic task

of "P" Parties to be completed with no lives lost through diving accidents during training, or during operations.

With the most up-to-date equipment, brought from Britain, divers started work in October 1945 on lifting the mines in Dunkirk harbour—which the Germans heavily defended against an invasion of the Continent after our evacuation from the beaches there in 1940.

ALL this in spite of the fact that German naval mine experts, questioned after the surrender, stated that some of their latest mines could neither be swept nor recovered without exploding when moved. But British naval divers, searching the bottom of the Bremen harbour in pitch darkness, working by sense of touch alone, had already removed the firing mechanisms from three of these mines and had hoisted them on to the dockside.

When a diver locates a mine he comes to the surface and reports its type. Here is an actual report: "German C-type mine, sir, about 8 ft. 6 in. long, welded in three places, parachute housing at one end. Underneath the mine a dead body. Civilian. Turn-ups to his trousers." Then it is the officer diver's turn. If the mine is clear of the dock wall he places an explosive charge against it and blows it up. If this would

PRESSURE MAGNETIC MINE, the first to be recovered at Bremen, had its clock removed by Lt. George Gosse, R.A.N.V.R., of a British naval "P" Party (see accompanying story). A mine blows up (left) after attention by our "human minesweepers." *Photos, British Official*

cause damage, he removes the firing mechanism, working under-water by sense of touch, so that the mine can be safely hoisted out of the harbour.

"Tin-openers" is the name the Royal Navy has given to its experts who open up captured ports and harbours. The story of how they cleared 19,000 mines and other obstacles at Leghorn lay behind an announcement in the London Gazette of July 2, 1945. Described officially as "crack men of a picked team," they wear a tin-opener on their vehicles as their badge. They had previously cleared and opened up the ports of Algiers and Naples. On arrival at Leghorn they discovered that the port itself was a mass of Teller mines.

THE port was blocked with sunken ships which divers had to cut up. There were numerous booby traps to be faced as well as intermittent enemy gunfire. Yet by "resolution and dauntless devotion to duty" the "tin-openers" cleared the port within ten days. When the first demolition charge was fired a mine went off sympathetically. This in turn set off an explosive charge under a lighthouse, which sent several hundred tons of masonry 300 feet into the air.

As an example of the booby traps left behind by the retreating Germans, one diver brought up a box which he had found on the sill of the dock. Inspection revealed that it was filled with 20 kilos of T.N.T. which would have exploded if the diver had trodden on it. Yet the divers considered that their most nerve-racking experience was the intermittent enemy shell-fire from 9-in. gun batteries outside the town. For if the diving boat is put out of action the diver faces the loss of his air supply, and if a shell explodes in the water even some distance away the consequences are as unpleasant as one could possibly wish for.

MONTY'S D-DAY BLUFF FOXED THE GERMANS

HITLER'S High Command were deceived over the date of D-Day—June 6, 1944—by the appearance of Field-Marshal Montgomery in the Mediterranean a few days before the invasion went in. He was received by Field-Marshal Sir Henry Maitland Wilson at Algiers with public ceremony. He visited other military headquarters. Fascist agents, by way of Spain, transmitted the news to Berlin that Monty was away from his invasion base.

BUT it was not Monty at all who flew from Britain to the Mediterranean. It was Lieutenant Clifton James of the Royal Army Pay Corps, a peacetime actor, the Field-Marshal's perfect double. Morley Richards, who met the lieutenant in a London restaurant on Oct. 4, 1945—"the likeness was so startling that until I noticed the two pips on his battledress I was certain it was the Field-Marshal"—has told the story of the great deception, in The Daily Express:

Clifton James, son of a Western Australian Chief Justice, is not permitted to tell anything about the greatest part of his career. But it is possible to piece together the story of one of the biggest bluffs of the war.

James was an entertainments officer at Leicester early last year. One night, he walked on to the stage in battledress and was loudly cheered by the troops under the impression that Monty was visiting them. The incident was reported in the Press, and a picture of James was printed.

It gave Britain's Military Intelligence an idea. Immediately before the great attack in December 1940, by Field-Marshal Lord Wavell on the Italian Army in Cyrenaica, the Italians had been fooled by the arrival by air of the British commander in Malta. If the Italians could be hoodwinked, why not the Germans?

James was sent for. He underwent special training for the part he was to play. Monty's voice, gestures, walk and distinctive salute had to be studied. The two men met, somewhere in the seclusion of the North. But there was a difficulty. Clifton James had lost a finger of his right hand on the Somme in the First Great War. That was the saluting hand, which could not be concealed. So they built a false finger for him.

A few days before D-Day, seen off by leading members of the Imperial General Staff, "Field-Marshal Montgomery" left on a tour of inspection in the Mediterranean. He was received at Algiers by Field-Marshal Wilson's aide and they drove with an American escort through streets of cheering people. There were introductions, presentations, and drinks at Field-Marshal Wilson's headquarters. Clifton James, deceived eyewitnesses say, played his part superbly. The plot had worked beautifully.

"FIELD-MARSHAL MONTGOMERY" was Lieut. Clifton James of the Royal Army Pay Corps, who made use of the resemblance to hoax the Nazis. *Photo, The Daily Express*

Will Atomic Weapons Cancel Themselves Out?

The only really revolutionary weapon produced in the War was the atomic bomb, effects of which are not yet fully known. That scientific research into atomic energy should be placed under International control, and that a general knowledge of its potentialities would tend to prevent its use in any future war, are the views of Lieut.-Col. GRAHAM SETON HUTCHISON, D.S.O., M.C.

SOME military critics suggest that the scientific discoveries associated with the transfer of matter into energy, so dramatically illustrated in the use of the atom of uranium, have completely revolutionized all military thought.

It is even asserted—I think with some cynicism—that the defence force of the future will consist of scientists, graded as Field-Marshals, Admirals, and Air Marshals, working in a laboratory set in reinforced concrete deep in the earth ; and that one airborne corporal, a pilot officer flying a jet-propelled plane, and a naval rating, as the combined force, will convey the laboratory product to the theatre of war while the supermen sit pretty and collect the honours and the medals !

THERE is much discussion as to whether secrets of the atomic bomb should be shared among the Allies at once ; and, indeed, whether the knowledge should be more widely revealed. Scientists assert that within three years, at any rate, these secrets will be the common property of the scientific world. It would seem, therefore, that all the secrets concerned with the use of atomic power should be available to the world. The results of the atomic bombing of Hiroshima and Nagasaki (see pages 344-345) are as yet not fully known ; but they are altogether terrifying, not only as affecting human life in the mass, but also the soil over a wide area, producing changes in materials at present beyond computation.

There has been grotesque speculation that man might blow up the world by means of his experiments. It is comforting to know that most of the substances of which the world is composed react as a smothering agency against atomic energy processes. It is true, also, that though an atomic energy blast heightens the radio-activity of every substance within the explosion area, the effect disappears very quickly. Nevertheless, unexpected phenomena are likely to be discovered when the bombed Japanese areas are subjected to a scientific inquest.

Energy Unequalled Even in the Sun

The blasts which levelled Hiroshima and Nagasaki on August 6 and August 9, 1945, had never occurred on earth before, nor, scientists believe, in the sun or the stars, whose heat is generated from sources working infinitely slower than does uranium. The first atomic bomb was equivalent to 20,000 tons of T.N.T. The energy released was beyond imagination, producing a wind with a velocity of millions of miles an hour, vaporizing everything within a mile of the explosion, producing temperatures comparable with that of the sun, and light visible to spectators 100 miles from Hiroshima as " brighter than the sun."

Let us come down to earth. The world must control this menace, and by mutual consent, or by sheer force. The purpose of war, as stated in our own Field Service Regulations, " is to force the enemy to abandon the purpose for which he is resorted to arms and to conclude peace on satisfactory terms." War results only after " all of the means of persuasion " have been employed, and these include " diplomacy, economic influence applied in the form of financial or commercial restrictions on its opponent or of assistance to its allies." If the world is foolish enough again to go to war, we can reflect with some satisfaction that war can be limited.

THE war of 1914–18 produced a new and horrible weapon. It was gas. It was expected in 1939 that gas would again be used. Every army was possessed of its offensive and defensive gas weapons and devices, produced also to serve entire nations. But gas was never used during the war now ended. And why ? The element of surprise is that which is effective in both strategy and tactics. Setting high hopes on gas, the Germans first used the weapon at Ypres in 1915. The first gas attack caught the British Army unprepared to meet it, but it was not sufficiently effective to accomplish our defeat ; and soon the opposing sides were both using gas shells, cylinders for the discharge of gases in a favourable wind, with gas-masks and chemicalized screens to protect dug-outs. Surprise had disappeared, and the novelty cancelled itself out by its use on both sides.

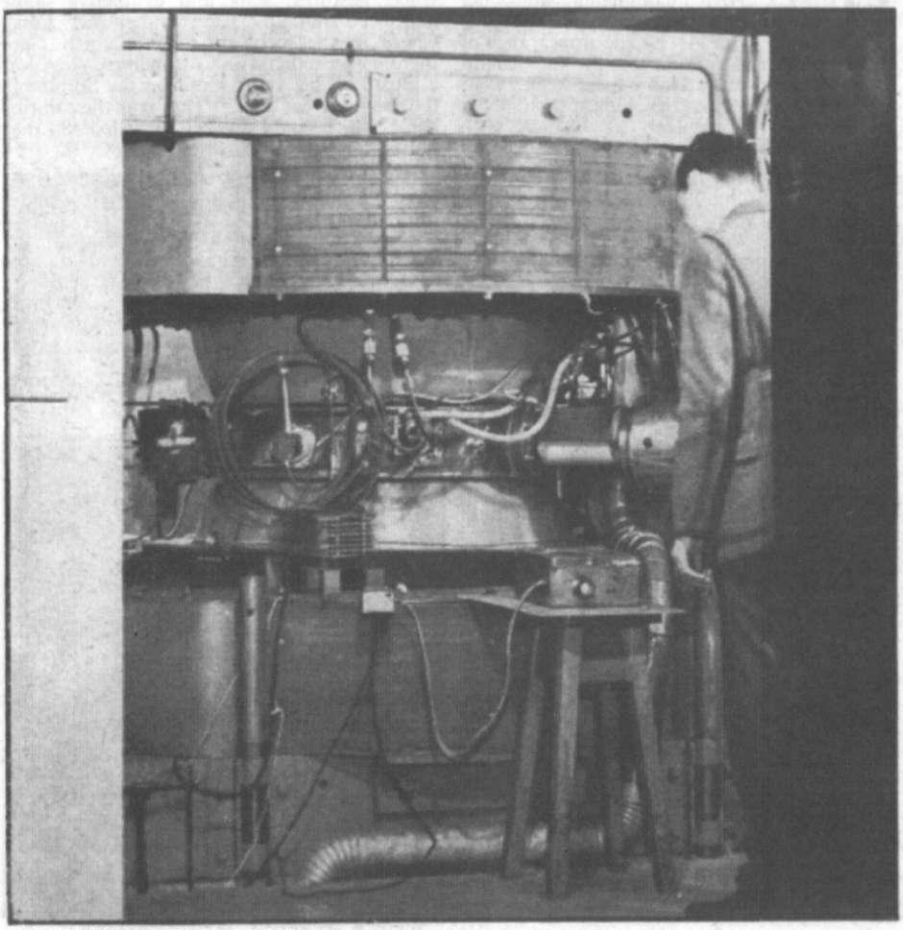
Source of An Immediate Reprisal

So gas was not used during the late war. Both sides feared to use it on account of the immediate reprisals to be expected, directed chiefly against the civil populations, though the Allies were undoubtedly also deterred by International Agreements. The war produced some surprising developments in weapons and devices. But the only really revolutionary weapon, launched with such staggering surprise, was the atomic bomb which brought about the almost immediate capitulation of Japan. In any future war, it can be assumed that weapons based on the atomic bomb, combined with developments of the V2 rocket, will be available to both sides, held in readiness, secretly positioned in remote districts and islands.

Even should one side resort to the use of such a weapon and succeed in blotting out a vast territory with all its inhabitants, somewhere within the vast perimeter controlled by one of the Great Powers there will be positioned the source of an immediate reprisal, capable of producing in the first aggressor country results equivalent to the devastation it has already wrought. In war it is futile to use means which will bring a dreadful retribution, and for this reason I believe weapons based on atomic energy will cancel themselves out. Victory must be worth while. What use is a victory when nearly all are dead and everything destroyed ?

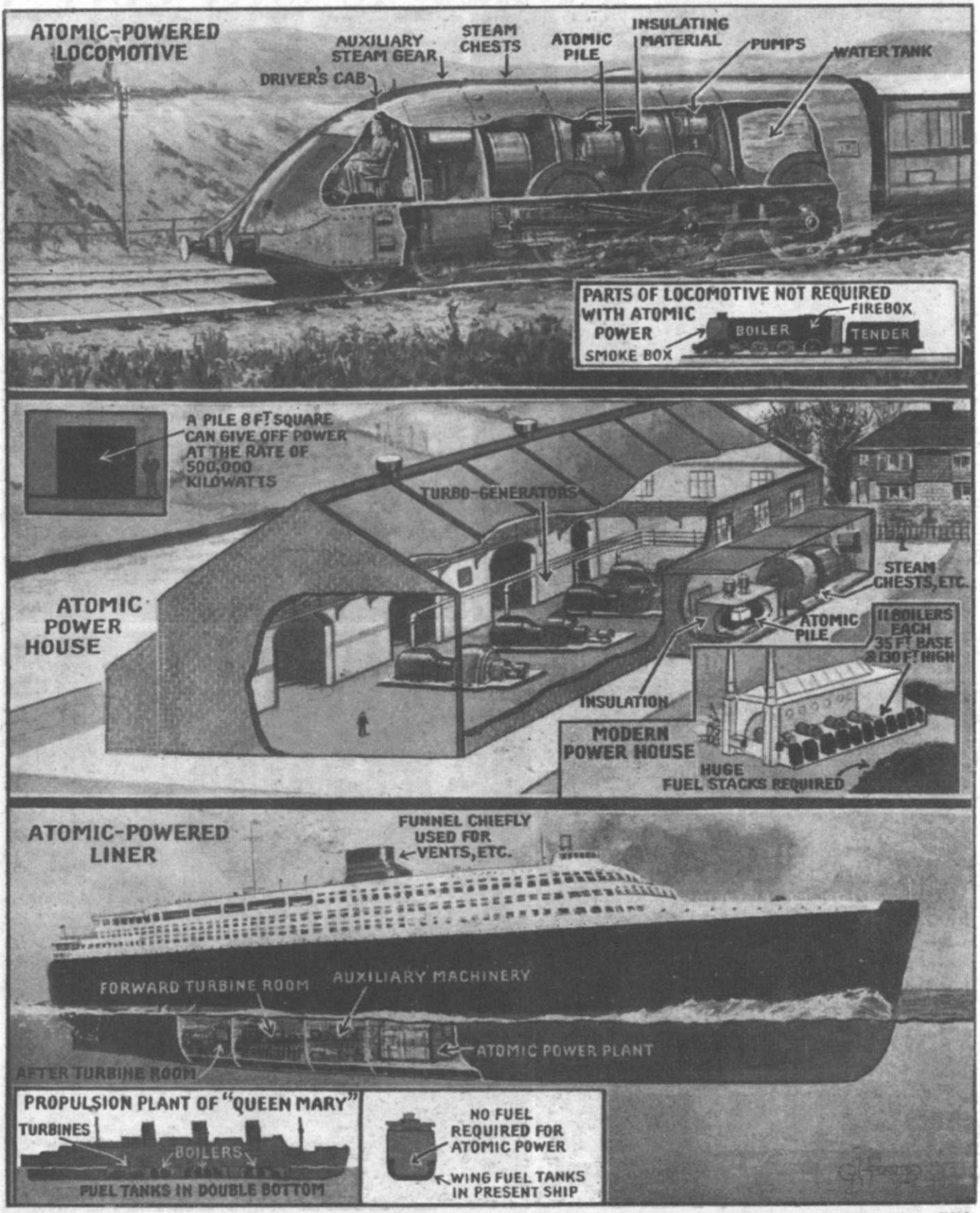
WHEN all is said and done, the situation calls for the placing of scientific research under International control. The world has been given its lesson, and we may be thankful that it was in a land accustomed to mass slaughter and destruction through earthquakes, and where a fatalistic religious belief robs death of many of its terrors.

Germany was only a short lap behind our scientists ; and if an atomic bomb had been the explosive charge in a V2 rocket, the effect of but one successful shot at London would have been annihilating. Scientific research must therefore at once be placed under International control, with an International Inspectorate with free access to every country, so that no lunatic, or wicked group anywhere, can experiment with the object of, or at the risk of, destroying mankind.



THE CYCLOTRON AT CAMBRIDGE has revolutionized British researches into atomic energy. Principal constituent of the atom bomb is the metallic element uranium ; the world supply of this hard white metal is very small, but by means of the cyclotron our physicists have been able to endow other substances with the needed properties of uranium.

Harnessing the Atom for Peacetime Purposes

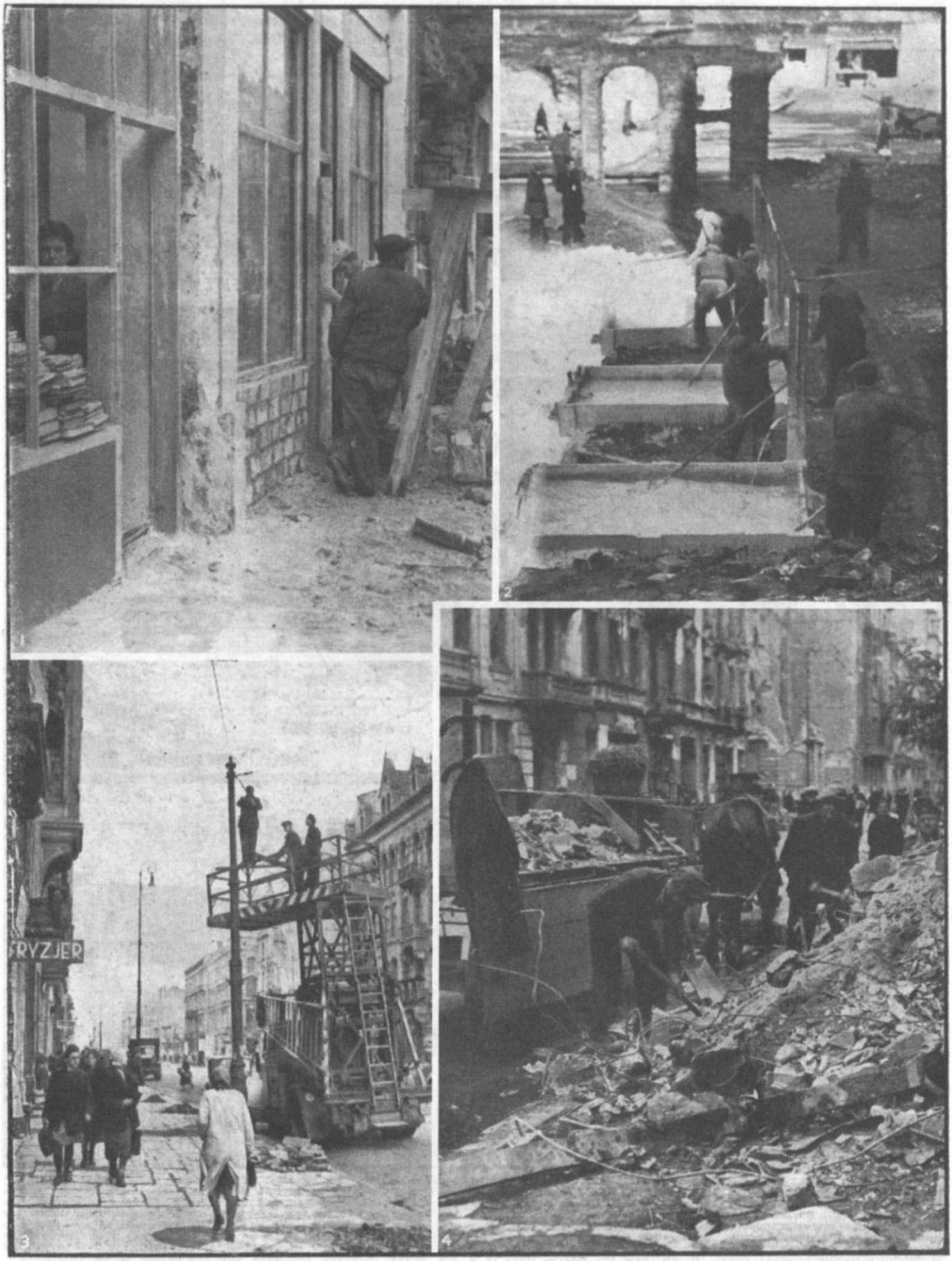


WONDERS OF THE ATOMIC AGE in the not-too-distant future—with nuclear power harnessed to the uses of peace—are shown in these diagrammatic drawings, based on the suggestions of Professor M. L. E. Oliphant, Professor of Physics at Birmingham University, who played an important part in the research work leading to the production of the atomic bomb. At the top is an atomic-powered locomotive; in the centre, an atomic power-house; at the bottom, a streamlined atomic-powered liner. In all these the motive force is derived from uranium which has been electrically disintegrated, the atoms having become energized and induced to "seethe" in tremendous movement. The natural uranium (U238) is in the shape of rods embedded in a graphite block and contained in an atomic "pile." The U238 contains small amounts of the special type of uranium (U235) used in the atomic bomb and which is particularly suited for the breaking-up of the atom. When this breaking-up is started, the turbulence caused by the colliding atoms produces heat which, by means of water-tubes surrounding the uranium rods, in turn produces superheated water under great pressure. When this pressure is lowered, the result is superheated steam which can be employed for power purposes, including the production of electricity.

The advantages of this system will obviate fuel and stoking. The doing away with masses of cumbersome machinery will obviously lead to revolutionary designs in many types of vehicles.

By courtesy of The Illustrated London News

Reconstruction in Poland's Wrecked Capital



WARSAW, FIRST ALLIED METROPOLIS TO FALL TO THE NAZIS (September 27, 1939) and later devastated by the sixty-three days' internal struggle of August–October 1944, was on the road to recovery by the autumn of 1945. New shop-fronts were being fitted (1), and among the shattered buildings workmen toiled at the mixing of mortar (2) to unite stones and bricks of the new city-to-be. Transport began to come to life again, mobile repair units erecting trolley-bus standards (3), whilst the removal of debris proceeded at speed (4).

Photos, Associated Press

I Was There!

Eye Witness Stories of the War and After

I Was in Java's Semi-Beleaguered Capital

Trouble in Java in the autumn of 1945 resulted from Indonesian resentment of Western rule, Japanese propaganda and arms, and a shipping shortage delaying Allied landings after the Tokyo capitulation. This dispatch (condensed from The Daily Telegraph) was sent on October 11. See also page 418.

LAST week I was besieged in Saigon. This week I am besieged in Batavia. It is a singular experience. Of course, neither city is besieged in the sense of being cut off from communication with the outside world. Contact by air has been assured in each case, and latterly by sea and river with Saigon, while Batavia has always been open by sea. But in the sense that armed and hostile bands encompass each city, and those who attempt to travel beyond the city limits do so at their own not inconsiderable risk, Batavia, like Saigon, is a beleaguered city.

With the exception of the capital itself the Indonesians appear to be in almost total control of the island. The Japanese forces in Java have handed over their own arms to them with an alacrity that suggests a prior understanding. As a result a force of Javanese of quite unknown dimensions, but almost certainly running into tens of thousands and clamorous for national independence, is now in possession of a great number of infantry weapons and a few light tanks.

WHILE British and Australian prisoners of war have all been safely evacuated, there remain about 60,000 Dutch civilians, including a large proportion of women and children, scattered about the island—tiny European enclaves among the 70,000,000 Indonesians of Java. It is a situation that gives adequate reason for disquiet. To the traveller arriving as I did this afternoon by air this state of tension is not immediately apparent.

A report widely current in Singapore yesterday afternoon stated that the Indonesians had taken possession of the airfield of Batavia—a bare two miles from the city—and it seemed unlikely that any planes would take off for Java today. I did in fact succeed in getting a lift with a Dutch plane, and the situation on our arrival at Batavia airfield seemed normal enough. R.A.F. and Dutch personnel were in complete control and promptly gave the lie to the reputed Indonesian coup. "Do you carry a revolver?" I was asked. "It is better not to show it in the streets of the town."

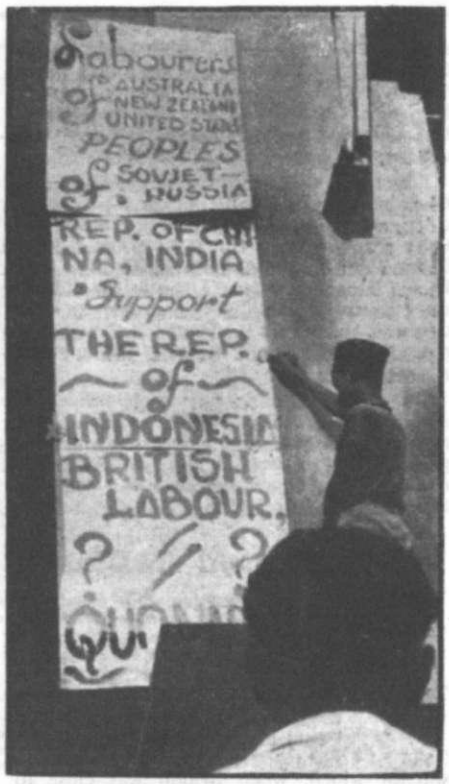
Grand Display of Mural Eloquence

We clambered into a truck and drove into the town towards the Dutch Army headquarters. Everywhere one saw the red and white flag of the native Indonesians prominently displayed. Every blank wall space was painted with proclamations and slogans written for the most part in English—a significant point.

They expressed a profusion of sentiments which suggested that the works of Jean Jacques Rousseau, Jefferson, Abraham Lincoln and Gladstone had been patiently thumbed by native propagandists. Not since Mussolini's Italy have I seen such a display of mural eloquence, though in this case the sentiments are impeccably democratic.

My lorry driver, mistaking the turning, deposited me in front of a long, low building which I learned with some surprise was the headquarters of the Indonesian Nationalist movement. Half a dozen somewhat sombre-looking Javanese in European costume seated on a veranda reading newspapers, feigned an elaborate lack of interest in my lorry.

The walls were painted with slogans in Dutch and in the native vernacular. But



IN BATAVIA, capital of Java, propaganda placards urged support for the Indonesian Republican movement. *Photo, Sport & General*

INDONESIAN REPUBLICANS WHIPPED UP ENTHUSIASM as they drove through a suburb of Batavia following the outbreak of disturbances in October 1945. On October 19 it was reported that British troops driving into central Java had reached Samarang, the third largest city, where extremists were said to have seized internment camps containing 22,000 people. Two days later Brigadier N. MacDonald, British commander at Bandoeng, stated that violence in any form would be answered by death. *Photo, Sport & General*

among these I noted with surprise Mr. Churchill's " Give us the tools and we will finish the job " printed in large characters in English. A drive of less than two minutes brought us to the Dutch military headquarters barely a couple of streets away.

Hitherto, Soekarno, the Indonesian leader, has been allowed to take charge of the reins of government in default of opposition from the scanty Dutch forces at present in the island and to the obvious satisfaction of the local Japanese troops. The Indonesians do not control the capital in the sense that they control the rest of the island, but they can at present move about Batavia without hindrance where they will.

They can and do post their propaganda notices all over the town and compel Asiatic residents, whether natives or Chinese immigrants, to display the red and white flag of the movement. They can and do print and circulate leaflets inciting the British Indian soldiers to revolt against their commanders.

We are, in fact, on the eve of a showdown here. The Indonesians look as if they are bent on forcing things to a crisis. There is a slowing down in the life of the city. Today many shops were closed, their owners fearing disorders and looting. The trams have ceased running, and there has been a partial strike of hotel servants in the employ of Europeans.

A temporary discoloration of the water in the town today set up a rumour that the Indonesians had poisoned the water supply, and though this has proved unfounded it does appear that a body of 20 Japanese troops who had been guarding the reservoir have today decamped on their own initiative and without orders. More and more it would seem that Lt.-Gen. Nagano Yoshiuchi, commander of the Japanese forces in Java, has been playing a decidedly questionable part in facilitating the present state of near-crisis.

Pans and Kettles from Sky-Battle Veterans

Just twisted lumps of metal on a scrap-heap, with great days of glory behind them. And now? Further service they will render, in new guise, as told by The Evening Standard air reporter James Stuart, recording a visit to Oxford on October 4, 1945. See also pages 426-427.

WHERE, I wonder, are the crew who used to fly the white-painted Coastal Command Wellington H.Z. 574? I have just been examining this old warrior which, when Britain was close to being strangled by the blockade, used to stalk the Nazi U-boats in the Bay of Biscay. She lies, wingless and tailless, with scores of other once proud aircraft—just one item in one of the world's biggest scrapheaps.

It is the bombers' graveyard: the last resting-place of some of the aeroplanes that turned the Ruhr into the greatest scrapheap in the world. The burial ground, too, of some of the Hurricanes and Spitfires which fought off the German invaders in the Battle of Britain. Some of these aeroplanes, broken up into almost unrecognizable twisted lumps of metal, I must have seen taking off from mile-long runways to bomb Berlin or Essen.

Seeing them today, piled into great heaps spread over acres and waiting for the 700 degrees centigrade heat of the furnaces to reshape them into oblong 28-lb. ingots of alloy, I was glad that the men who flew them, who affectionately painted on their sides names and a bomb for each raid or a swastika for each Nazi aircraft shot down, were not there to see the ignoble end.

40,000 Tons of Scrap to Handle

That is the sentimental view. The more realistic Ministry of Aircraft Production, whose establishment this " graveyard " is—officially it is the No. 1 Metal and Produce Recovery Depot—are getting on with the job of turning old, unwanted aeroplanes into material to be used for peacetime products. There are between 30,000 and 40,000 tons of scrap, and it is being added to at the rate of 2,000 tons a week. An even greater recovery depot is working near Durham.

Besides the great stacks of scrap of battered fuselages, wings, old engines and gun turrets, there is a huge store of ingots, stacked in piles of 200 tons each. These are being kept for help in peacetime reconstruction. One day soon, perhaps some of those ingots may be converted into saucepans, kettles and frying-pans for use in Britain's kitchens.

I Walked Into a Junkyard and Found Green Gold

In the ruins of Tokyo's bombed mint Henry Keys of The Daily Express wandered among treasure whose value is not yet computed—much of it loot from conquered countries. In the city, homeless and starving wandered in threadbare clothes. His illuminating story is dated October 11, 1945.

IN pouring rain and biting wind I have just been tramping over millions of pounds' worth of gold, silver and platinum in the bomb-shattered ruins of Tokyo's mint. It was treasure found by the U.S. Army. I have handled small but heavy ingots of gold, shaped like chocolate bars, worth thousands of pounds apiece.

Like the silver, they had turned green and discoloured by exposure to weather. Most of the roofs and walls of the mint had been thrown to earth by bombs from Super-Forts, and the treasure left naked to the sky. Rusty riches, inextricably mingled with broken mint machinery, made it seem as though I wandered through an abandoned junkyard. Yet I was stepping upon one of the richest pieces of ground in the world.

When the army arrived, all this treasure was unguarded. Today heavily armed American sentries stand defending a hoard no part of which anyone ever attempted to steal since the mint was bombed. When I arrived the only people in the mint were 200 Japanese employees who survived the bombing. They were little more than boys and girls. Nobody had thought to tell them to cease work, so they had gone on patiently adding up accounts, patiently polishing by hand gold and silver medals struck at the mint for Japanese soldiers.

Apart from a few buildings, most of the mint was burned to the ground. Ashes of the fires have blown away, and there is little rubble. But everywhere I stumbled over masses of precious metals which looked like solidified lava. In one cell, like a blockhouse, partially melted teapots and other silverware were heaped high in a solid disordered mass. Standing on a concrete floor, all that remains of another building, were hundreds of silver ingots almost too heavy to lift, wet and slimy, without a gleam to them. In a vault under the strongroom was yet more of the vast treasure, piled in water ankle deep. In the same building little Jap boys and girls huddled round a fire to cook their rice. They had no more interest in all this wealth than the man in the moon.

Evidence that much of the treasure is loot stolen from conquered countries was found in barrels and melting pots. I saw gold and silver coins, some British, many from Indo-China and other Far Eastern countries. This stolen wealth, it is expected, will be returned to the rightful owners.

"I CAN'T understand the Japs," said an American officer. "They'll rush into the hills with a looted lathe for which they have no earthly use, or a broken sewing machine and a thousand worthless things, but here they don't seem to have touched a thing." So, as the Japs are doing no harm, and there seems to be nowhere else for them to live, Americans are allowing them to stay and sit by their fires, or play with their account books, poor and half-starving amid wealth the like of which I never expect to see again.

My outstanding impression after seven topsy-turvy weeks in Tokyo is that the Japs are pleasantly surprised. Although they are under the conqueror's heel—and no two ways about it—it is not an iron heel. And the Japs have themselves, not MacArthur or any of the occupation troops individually, to thank for it.

You see, Suzuki San (Japan's Mr. Jones), for reasons best known to himself, surrendered with such complete whole-heartedness that, far from making himself objectionable or showing any signs of hostility at any time, he has gone to the other extreme. If you ask your way Suzuki San will not be content with trying to give you directions. He will ride in your jeep with you to the place you want, and then cheerfully set out to walk several blocks—or several miles—back to the spot where you picked him up.

Thousands Fled Before the Landings

And yet Suzuki San when we first arrived was in a dangerous mood. He was sullen, and you could see hatred smouldering in his eyes. Possibly that was because he was frightened. He and his womenfolk had been given a strong propaganda injection and were expecting anything from beatings to theft, murder and rape on a grand scale.

In fact, thousands of women fled before the landings from our initial area of occupation in and around Yokosuka and Yokohama. Those who remained dressed themselves as unattractively as possible in ugly Japanese slacks or siren suits which had not apparently been washed in years. Now, seven weeks later, the population of Tokyo itself has increased by more than half a million. And the women, far from being frightened, try to flirt with any G.I. they see.

Money is desperately hard to come by. So the Japs are taking in washing, for washing is one way to earn money. Throughout Tokyo,

IN HIROSHIMA small girls in long-legged bloomers—a wartime fashion—wear masks to protect them against infection in the atomic bomb-blasted city's ruins. *Photo, Keystone*

in the back alleys, along the main roads, or in the middle of ash heaps, wherever, in fact, there are pools of water caused by broken mains, you will see women and children squatting on their haunches washing khaki clothes, without the benefit of soap, because there just isn't any in Japan.

One of the great mysteries of Tokyo is where its 3,000,000 people are living. The trains and trams are always crowded with silent men, women and children, most of them in threadbare and much-patched clothing. They appear as if from nowhere out of the vast waste of ash and rubble, wait quietly at the tram stops, travel a mile or two and get out in the midst of another waste of ashes. Then they disappear, clumping up the streets on the miniature platforms they use for shoes.

'Free to Lie Their Heads Off'

It takes time for the eye to identify in the rubble the tiny, rusted, corrugated iron shack of a single room with earth floor which represents home. Some of these wretched hovels have walls of paper and thin boards. They are scarcely waist-high for the white man, but that is the way Japan's poor are living in the capital—like rabbits in a warren, with small hope of anything better for a long, long time.

The docile patience needed for train travel is beyond imagining. The Jap arrives at the station hours ahead of departure time and then, a few hours later, risks death to push a way into the foul-smelling, filthy carriages. There he goes on standing. A heavy percentage of farmer's crops is regularly seized by the Government to make the food go round.

Certainly the farmers are paid, but they would rather have their crops. You can buy much more by barter than with money. Indeed, the farmers, who are otherwise poor, just about own most of Japan's clothing. They took it during the war in exchange for food—Western-style suits, kimonos, silks.

It is hard to tell what the Japanese really think of the occupation. Many make such outrageous statements, with polite sucking intakes of breath and careful bows, that you can be forgiven for thinking they have misinterpreted freedom of speech and think it means the people are free to lie their heads off. But we do know the Japanese as a nation were forcibly impressed by the Super-Forts.

They are glad that the war is over, but largely, I think, because they believe that Japan is on the threshold of an even brighter future, and that all that is necessary is to be good and obey General MacArthur. Then, sooner or later, they will be repaid.

FOOD QUEUES IN TOKYO grew longer following General MacArthur's order on September 25, 1945, directing the Japanese Government to stimulate production of consumer goods, meaning that Japan must henceforth feed herself. Food has been strictly rationed in the capital, only fish being plentiful. This queue includes "demobbed" soldiers. *Photo, Keystone*

R.A.F. Dinghies in Action on a Flooded Airfield

In places eleven feet deep and nearly 200 yards wide, swirling waters trapped sleeping R.A.F. men in their billets at the Baroda Airfield, India. They perched themselves on upturned beds and sent distress signals until Air-Sea Rescue equipment was brought into use. The story is told by the Commanding Officer, Wing Commander D. W. Morrish, A.F.C.

BEFORE going to bed on Sept. 22, 1945, I told the guard to watch for flooding. In the early hours, a messenger called me—the telephone had failed—to say that the water was rising at the rate of 18 ins. an hour. And some airmen's billets, the equipment section and the ration store, were islands in a great lake which had appeared as if by magic. From the billets, nearly 200 yards away, a light was flashing, and I recognized Morse signals. They told us the water was up to five feet and rising steadily.

I replied, with my torch, that we were coming to their rescue. The rain was torrential, and when one of my staff instructors, Flying Officer Wilson, tried to swim to the stranded men he had to turn back after going 100 yards because the current pulled him well off course.

THEN, probably for the first time in such circumstances, Air-Sea Rescue equipment was brought into use. Four rubber aircraft dinghies were launched, the first attempted crossing being a failure owing to the increasingly strong current. Another crossing was tried, from a point well above the billets, and with a lifeline taken from the laundry, the dinghy was paddled to the billet, now in danger of being submerged. A dinghy "ferry service" was established, and 16 men, nine of them non-swimmers, were brought safely to the road, which was still above water level.

I saw the men's kit, including tin trunks with gifts the men were taking home to England, floating away. Some of them lost their money too. Dawn had broken when the last man was paddled to safety after six hours sitting on the upturned beds. The 16 went to sick quarters, but the ordeal produced only one "casualty" in the entire camp—a cold. The ferries went on salvaging what remained.

We faced another crisis when the equipment and ration stores, containing eight tons of food, were flooded. Most of the food was destroyed, and we saved only tinned stocks. Things looked grim, because there was no sign of the rain abating during Monday (September 24). So I sent an SOS to Group Headquarters for emergency food supplies.

The airfield, partly inundated, could still be used by experienced pilots. And on the Tuesday an aircraft arrived from R.A.F. Station, Palam, near Delhi, with a maximum load of rations, followed by two more from Bombay, similarly filled. I received a frantic call on the Monday night when the lifeline broke during salvaging operations, and we had to make another rescue trip in a dinghy. Indians killed ten snakes which were carried into their billet by the water.

In 48 hours more than 20 ins. of rain fell. The camp was cut off from the city of Baroda, three miles away, for two days. And, for a time, signals communication ceased when a mast was swept away. Preparations were made to evacuate the entire living site which, it was feared, would be washed away if the lake above it, in the village of Harni, burst its banks. But the banks held. One of the aircraft from Bombay carried the British Resident in Baroda, Lt.-Col. Hancock, who made a remarkable journey from the camp.

We took him as far as possible in a truck, to which we had lashed the dinghy. When the truck had reached its limit the dinghy was launched, and the Resident, enjoying the adventure immensely, was paddled to a waiting pony-cart. This could not cross the submerged bridge, and I understand he finished his journey on an elephant!

★—*As The Years Went By—Notable Days in the War*—★

1939

October 14. *H.M.S. Royal Oak torpedoed and sunk by U-boat in Scapa Flow.*
October 16. *Cruisers Southampton and Edinburgh and destroyer Mohawk damaged in bombing raids on Firth of Forth.*
November 8. *Bomb explosion in Munich beer-cellar shortly after Hitler's departure.*

1940

October 28. *Italy launched attack on Greece.*
November 5. *H.M.S. Jervis Bay sunk by surface raider while defending convoy in Atlantic.*

1941

October 16. *Rumanian troops entered Odessa.*
October 19. *State of siege in Moscow.*
October 24. *Germans captured city of Kharkov.*

1942

October 17. *Schneider armament works at Le Creusot wrecked in daylight raid by R.A.F.*
October 23. *Opening of Battle of El Alamein.*
November 2. *Kokoda (New Guinea) recaptured by Australians from Japanese.*
November 8. *Allies landed in French N. Africa.*

1943

October 13. *Italy declared war on Germany.*
November 1. *U.S. forces landed at Bougainville.*
November 6. *Kiev recaptured by Russians.*

1944

October 14. *Athens and Piraeus liberated.*
October 20. *Aachen captured by U.S. troops.*
October 23. *Red Army broke into East Prussia.*
November 1. *Marines landed on Walcheren.*

Radar in the Air War

By CAPTAIN
NORMAN MACMILLAN
M.C., A.F.C.

By December 1935, when aircraft could be detected 40 miles from the coast and at 15,000 feet, five radar stations were set up on the English east coast. These were the beginning of what was called the Chain Home. Training of R.A.F. personnel began in 1936. By 1937 radar reached out to 100 miles, and 15 more stations were authorized to cover the whole of the east and south-east coasts of Britain. By September 1938 range reached 150 miles. When Hitler's army marched into Prague the Chain Home radar stretched from the Isle of Wight to Scotland, and a 24-hour radar watch began. At the outbreak of war the chain extended to the Pentland Firth, covering Scapa Flow.

Comparatively long wavelengths of up to ten metres were then employed. These illuminated the atmosphere as a lamp bulb illuminates a room. The ground reflected the waves, and the system did not detect low-flying aircraft. Another radar set was produced to scan the low altitudes, and by September 1940 a series of Chain Home Low stations (see illus. page 320) gave continuous cover from the Orkneys to Weymouth, with local cover for the West Country peninsula, Pembroke, Merseyside, and Clydeside. The flow of information from these two radar intelligence chains passed into Fighter Command's operations rooms, to be implemented by the information provided by the Royal Observer Corps when aircraft became visible to the eye or audible to the ear. By September 1941 the only radar gap was off the West Scottish coast covered by the naval convoy approach lane.

Radar stations observed the massing of enemy squadrons behind Cap Gris Nez when the Luftwaffe formed up for assaults in the Battle of Britain, and this advance intelligence enabled commanders to place R.A.F. fighters in position at the right time to oppose the attacks. Means were devised to assess the number of aircraft in a raiding force, and thus distinguish between German feint and main attacks.

DEPTH-CHARGE Carrying Aircraft Prevented U-Boats From Surfacing

It was a logical step from ground radar to airborne radar, and when it was discovered that ships could be detected by radar-equipped aircraft, Coastal Command received priority. By the end of 1939, Air to Surface Vessel radar Mark I (ASV—pronounced Asvic) became operational, although not very efficient. Nevertheless, a radar search by a R.A.F. Sunderland of 228 Squadron preceded the Fleet Air Arm torpedo attack on the Italian fleet in Taranto. By mid-1941 airborne radar could find submarines, and 60 aircraft were carrying ASV Mark II. A year later submarines could not safely recharge their batteries on the surface at night because of depth-charge carrying aircraft equipped with radar and the Leigh light. The Germans, however, produced a listening receiver to detect the Mark II radar, and submarines were then able to submerge before the aircraft "homing" on them by means of radar could see them.

But British scientists had already discovered how to use waves of much shorter length, and under Professor J. Randall at Birmingham University the magnetron valve, the heart of modern radar—able to emit waves down to ten centimetres in length (about 1½ inches)—was devised. These new sets produced a powerful beam which could be focused, and introduced defence problems which the enemy never solved. His U-boats could not detect the approach of aircraft using centimetric radar. In May 1942 the first submarine was sunk with its aid. Flight-Lieut. J. A. Cruikshank's V.C. submarine attack was made possible by it. (See illus. in page 376, Vol. 8.) ASV centimetric radar not only played a major part in the defeat of the U-boat but also detected German convoys at night in the Skagerrak and Kattegat.

Fighter Command received second priority for airborne radar. The first airborne interception claim was made by an experimental unit on the night of July 22-23, 1940. Ground Control of Interception radar (GCI) was developed simultaneously, so that fighters could be controlled direct from ground radar stations by day and night instead of through the group headquarters operations rooms. One GCI set used the skiatron—an upright screen like that used on a pre-war television receiver; the trace from the transmitter showed as a line across this screen, and the distance of the blip from one end of the line indicated the distance of the aircraft.

BRIGHT Spot of Light Betrayed Aircraft's Bearing and Distance

Then came the Plan Position Indicator (PPI), with a horizontal screen whereon the trace ran from the centre radially outwards. An aerial swept the whole sky on a turntable. Any aircraft's location was shown as a bright spot of light on the trace, which consequently gave both bearing and distance. A map used in combination with the PPI screen showed the complete position at a glance. By Christmas 1940 the first PPI set left for its site, mounted in a mobile lorry, and five more quickly followed. In conjunction with Beaufighters carrying airborne radar this new defence began to play havoc with German night bombers, and in May 1941 more than 100 were shot down by A.I. and other night fighters and 42 were shot down by ground defences.

Early A.I. sets used the longer wavelengths which received ground reflections, and this limited the range at which the sets could be used to a distance not exceeding the height of the aircraft. The ground controller handed over to the aircraft's observer when the night fighter was about 12,000 to 15,000 feet from the enemy bomber. The observer operating the airborne radar (called in R.A.F. slang the "box-basher") then directed his pilot by means of the intercommunication telephone until the hunted aircraft came within visual range.

From this came Fighter Direction for offence. The first offensive ground radar station became operative in Kent on December 31, 1942. This and other stations warned Allied fighters operating over the Continent of enemy aircraft, and directed them into offensive actions. The Luftwaffe was forced back deeper into France as a result of the radar-directed offensive sweeps, and offensive ground stations had to be re-equipped with higher-power transmitters and longer-range centimetric height finders. Radar watch from these stations protected aircraft engaged in bombing V1 and V2 sites, and assisted fighters to shoot down V1s launched from France. After D-Day mobile radar units went to the Continent.

Bomber Command was last to have radar assistance, but it made perhaps the greatest use of airborne radar. About March 1942 a radar set called Gee was produced which enabled navigators to know their position accurately in all visibilities, day or night, over an arc from Britain to the Elbe, Hanover, Cassel and Mannheim. This enabled the Staff to plan the first 1,000-bomber raids. The need of accurate target marking then became apparent and the Pathfinder Force was formed. Their aircraft used another radar set named Oboe, which worked in conjunction with two ground stations, called the releasing and tracking stations, which formed the British base for a triangle whose apex was the meeting point on the Continent of the two radar beams. Through the selected target ran the segment of an imaginary circle whose centre was the releasing station. The two beams were arranged to sweep so that their crossing point moved along the imaginary segment. When the pilot of the Oboe-equipped pathfinder Mosquito first picked up the point where the beams crossed he heard a continuous note in his earphones, and signalled to his home station.

The pilot then followed the beam apex towards the target by means of the continuous note. If he deviated to right or left this note broke into dashes or dots respectively, so warning the pilot to steer back into the 17 yards wide track. Above the continuous note he heard in Morse the letter A at ten minutes flying time from the target, B at eight minutes, C at five minutes, D at three minutes. Then came five pips and on the last pip the bombs or target indicators were released, and an aiming accuracy of within 50 yards could be checked at the home stations. Gee-equipped bombers followed up to bomb by the flares.

Oboe signals could not be jammed or intercepted by the enemy because they were not subject to ordinary radio interference; they required radar reception instruments to convert them into intelligible signals. But their range was limited to about 250 miles, and so the set called H2S was devised for use irrespective of distance.

ROUGH Map of Ground Flown Over Was Shown Clearly on a Screen

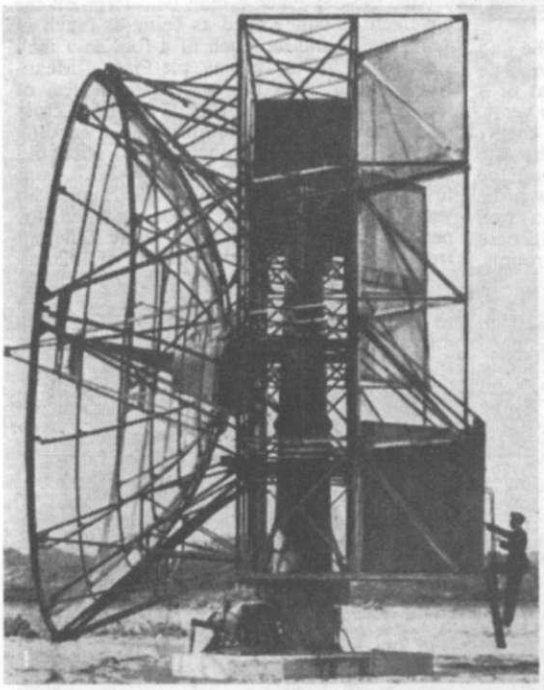
This self-contained aircraft radar unit had a transmitter and receiver to send signals from the aircraft to the ground and record the echoes within the aircraft. Water, giving no response, showed blank on the cathode tube screen. Buildings, ground, bridges, ships, and other objects were visible as points of green light whose intensity varied according to the radio-reflecting value of the object. The screen thus showed a rough map of the ground flown over, unaffected by clouds, fog, smoke, camouflage, or darkness, and on which, with practice, it was possible to pick out targets and so bomb solely by instruments.

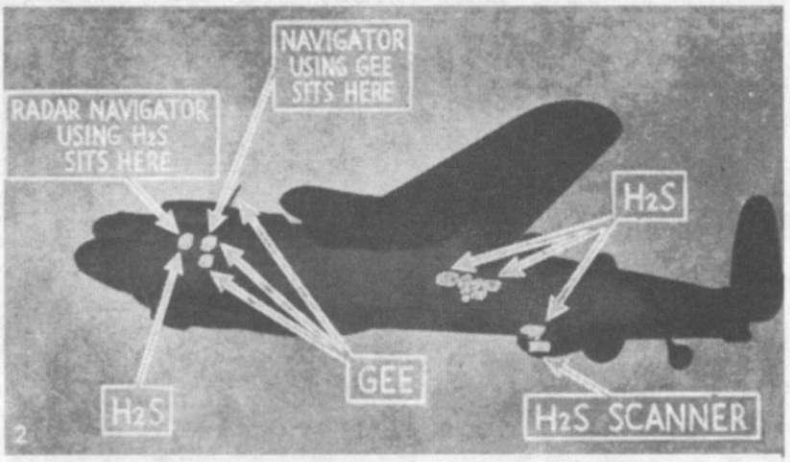
From 20,000 feet Bomber Command Oboe-controlled aircraft silenced the German guns threatening the sea lanes leading to the Normandy beaches, and with H2S sets smashed the railway yards during the strategic blows preceding the break-out from the Normandy beach-heads. Attacks on oil targets were made with the aid of Gee-H sets; these enabled the aircraft navigators themselves to work out the moment for bomb release by using special charts in co-operation with ground signals.

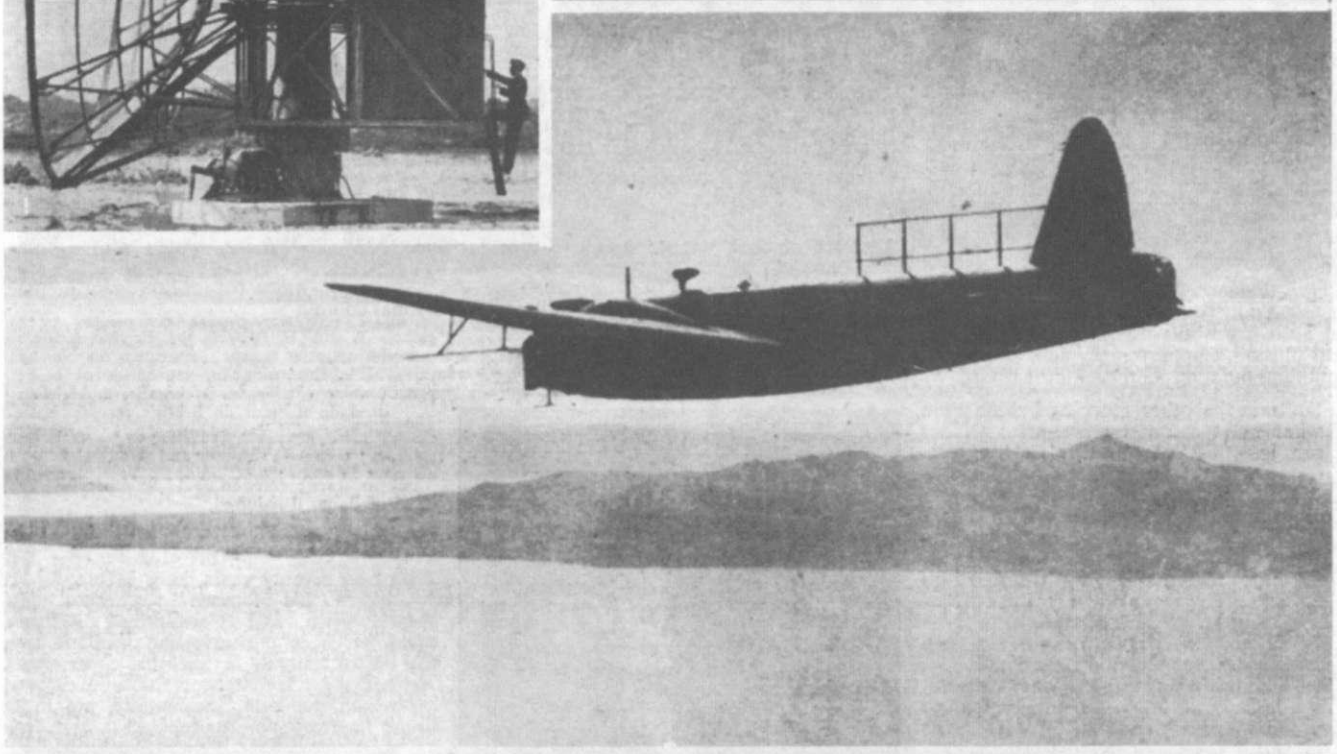
Two more aids for aircraft were the identification, friend or foe (IFF) device, which enabled friendly aircraft to pass unmolested through the skies, and whose absence brought hostile aircraft within the orbit of defence; and an instrument to enable air gunners to determine the presence of other aircraft near his own, and to distinguish between hostile and friendly fighters.

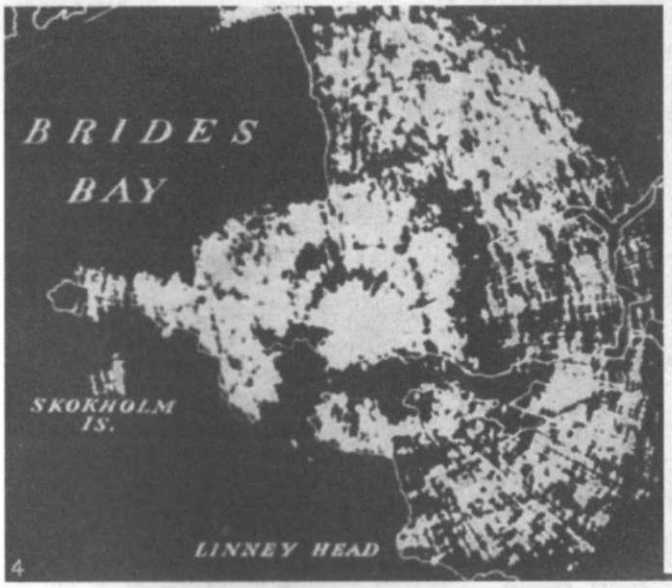
Airborne forces used a radar beacon called Rebecca-Eureka. At Arnhem the first forces to land erected the beacon Eureka at their point of concentration, and Rebecca, fitted in the other aircraft in the lift, homed them on to the beacon by the coded radar signal which alone made the beacon respond.

Devices That Revolutionized R.A.F. Tactics









DIRECTIONAL AERIAL SYSTEM TO AID OUR FIGHTERS is seen (1) with built-in cabin housing both transmitter and receiver. The diagram (2) shows radar equipment as installed in a R.A.F. aircraft (see article in facing page). Wellington bomber showing radar apparatus atop the fuselage and beneath the wings (3). Radar map of the south-west tip of Wales (4) as shown by night on the cathode-ray tube of the "H2S" instrument (names and coastline added). A W.A.A.F. (5) plotting the position of planes from the cathode-ray tube.

Photos, British Official

Editor's Postscript

WALKING down Fleet Street towards Ludgate Circus on The Daily Telegraph side the other day a young journalist noticed a small crowd of Lancashire folk gesticulating in the direction of St. Paul's. Being a journalist—and with time on his hands—he stopped. One of the visitors was pointing at St. Martin's-Within-Ludgate, the exquisite little Wren church halfway up Ludgate Hill, which boasts one of the loveliest of the City's spires. The journalist followed the pointing finger and saw, to his astonishment, that the spire was tilting backwards quite unmistakably towards the Old Bailey. Here, indeed, was a story to cap Canon Alexander's recent "disclosure" that St. Paul's is advancing down Ludgate Hill at a speed reliably computed at one inch in a hundred years! He looked again, and there seemed to be no doubt of it: the spire was most definitely on the bias. Hurrying to the church, the journalist sought out one of the elderly women vergers who have been looking after the building since the war. She listened—in slightly amused silence, it seemed. Then she bade him retrace his steps up Fleet Street and look at the spire again, from the other side of the road. Which, in a state of mild confusion, he did, only to discover that this time the spire seemed to be tilting towards the Thames! According to the "verger," hardly a month passes without someone rushing into the church with the announcement, "Your spire's falling—have you heard?" The whole thing, of course, is an optical illusion, emphasized by demolition of surrounding buildings damaged in the blitz.

IN the train the other morning I came upon what must surely be first-prize winner in my long list of "officialese" expressions inflicted on us by our Civil Servants since the outbreak of the War. The perpetrator of this beauty was an official whose name is not entirely unknown to the public: on looking him up in "Who's Who" I find, incidentally, that his highly distinguished academic career included a much-coveted Classical Tripos. Which all goes to prove—what? I am still wondering. It occurred at the conclusion of a long description of proceedings taken by the police who had summoned him for a black-out offence two or three years ago. "Luckily," declared the High-Up from Whitehall, "I had witnesses, and we were able to prove to the chappie on the Bench that it was actually ten minutes before non-lighting-up-time." I confess my eyebrows must have betrayed my horror at this new mutilation of our mother tongue, for the phrase was repeated at "dictation speed" for my benefit. It was with difficulty that I refrained from inquiring whether since the lifting of the black-out the hours of darkness are (officially) described as "de-non-lighting-up-time"—which they well may be, following the hideous analogy of "de-requisitioning." I commend this new monstrosity—"non-lighting-up-time"—to the attention of Mr. Ivor Brown, Sir Alan Herbert and, above all, to Lord Wavell who has suggested the formation of a National Trust for words to save our language "from inflation and deflation, type-ribbon development, and suchlike."

ONE of our best-known London booksellers has been complaining to me about his inability to cope with the demand for books about Japan. Ever since the Tokyo surrender, readers of all ages and both sexes have been demanding books on Shintoism, Japanese Art and Nippon life and landscape in general. Particularly in request—believe it or not—have been the works of Lafcadio Hearn, that strange Anglo-Irishman who lived and lectured in Japan towards the end of last century, who married a Japanese wife and whose books have been somewhat of a drug on the market for the past twenty years. Why this sudden interest in a defeated enemy thousands of miles away I can't for the life of me fathom, for if ever a nation had the gilt rubbed off its pseudo-romance it was the Japanese. On the other hand, I can well understand the new "run" on Japanese prints reported from some of the sale rooms. It is, incidentally, an odd commentary on our Occidental taste that many of the most treasured Japanese prints to be found in European collections were originally designed as travel posters—pictorial inducements to voyagers to visit Japan—after Perry had opened up the country to Westerners round about a century ago. For all I (or most people) know the Japanese lettering accompanying many of them may read "Try Fujiyama this Fall" or even "Yokohama is so Bracing!" My old friend Arthur Morrison, probably the greatest living authority on Japanese prints (his £40,000 collection is in the British Museum), tells me that some of the finest of these lovely colour blocks were originally produced for the amusement of children and to decorate the houses of the humblest of artisans.

EVEN a chicken has its good reasons for crossing a road, however much the motorist may rage. The introduction of compulsory pedestrian crossings in built-up areas will deny to human beings the proverbial right of a chicken by finally robbing them of the freedom of the highway, which nowadays means in effect the freedom to risk their own lives. The arguments in favour of the proposal seem to me overwhelming, and we may yet see the day when a man who steps off the pavement is condemned as being as much of a trespasser and as much of a fool as a man who jumps off a railway platform. Meanwhile, I shall miss the agreeable courtesy of the existing notices which say, "Please cross here," even though the ambiguous wording provoked one of Mr. Punch's incorrigible old ladies to ask, "Need I cross if I don't want to?" On the other hand, the man who wants to organize a rule of the pavement for pedestrians is barking up a quite different tree. As long ago as the autumn of 1926 an all-out attempt was made with the help of public notices and a minor press campaign to coax and cajole the pedestrians of London into walking on the left of every pavement. In less than a week the experiment was abandoned not only as hopeless but as pointless. The public blandly refused to co-operate, and nobody in authority could produce any sound reason why they should. If two pedestrians collide—and how rarely this happens, in spite of the comic papers!—no one is likely to be killed or maimed. The worst that usually happens is momentary altercation and irritation, but the encounter may just as often evoke (with a certain amount of side-stepping) those mutual beg-pardons and my-faults which express in their humble way a graciousness in public conduct we can ill afford to spare.

PIERRE LAVAL, former French Premier, executed for treason, in Paris on October 15, 1945, after he had unsuccessfully tried to poison himself. He is seen during his sensational trial, from which he was several times ejected. PAGE 446 *Photo, Keyston*

RECENTLY—and for one day only—there appeared in The Times the following advertisement, modestly tucked away in the Personal column:

£4,000.—A BATH ROOM for Private SALE; made just prior to war from rarest marbles by eminent English craftsmen, regardless of cost; approximately 15 ft. by 10 ft.; walls of Algerian Onyx with dado of Fleur de Pêche; recessed bath and lavatory basin carved in white statuary; sponge bowls, etc., in lapis lazuli; engraved Lalique mirrors; complete sanitary and electrical fittings; all now in store; erection could be supervised by eminent designer if required.

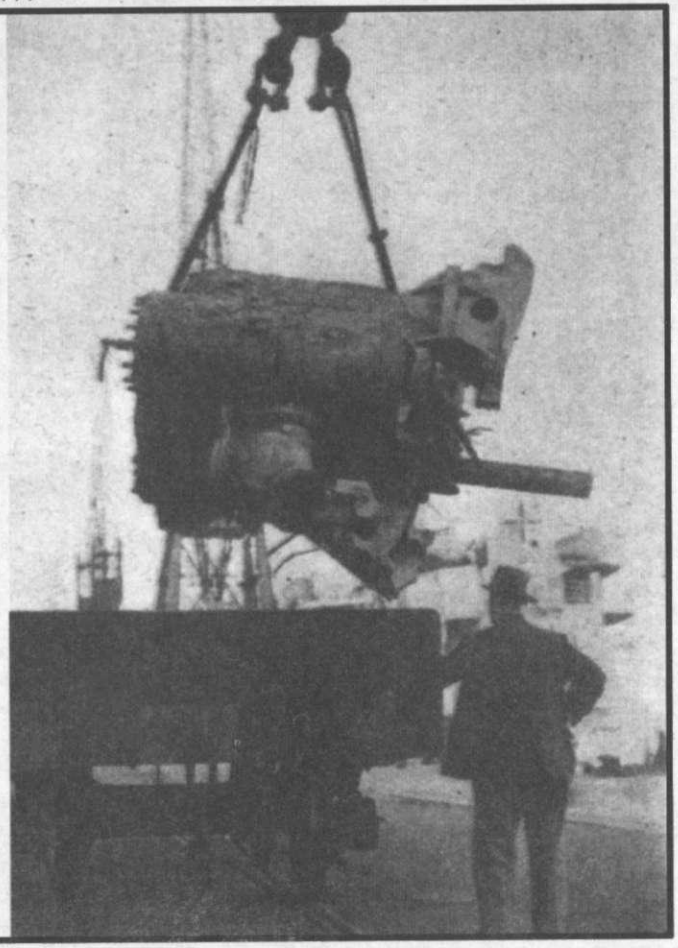
On which we can only comment: What—no coupons?

FOR over seventy years, long before Pavlov began his famous researches into Behaviourism and Conditioned Reflexes, there has been controversial deadlock over the use of animals in scientific experiments. Neither the scientists nor the animal-lovers (of whom the bulk, incidentally, are to be found in Britain) were prepared to give way. Much to my delight, I have just heard from Major C. W. Hume, Chairman of the Universities Federation for Animal Welfare, that something rather better than a compromise has at last been reached. It consists—nothing more or less—in the publication of a handbook, compiled by the U.F.A.W., dealing with the care of laboratory animals, which is about to appear with the blessing and approval of leading men of science. The handbook (Messrs. Balliere, Tindall & Cox will publish it) gives technical instructions for keeping the various species as comfortable and contented as possible, for anaesthetizing them, and for reducing to a minimum the number of animals required for achieving a given degree of precision. There is also a chapter on the "rights" of laboratory animals. Knowing something of what has been going on behind the scenes in the matter of animal experiments, I regard the scientific approval of the new handbook as an important victory for the U.F.A.W., whose unobtrusive yet highly practical efforts have always had my support. I feel sure that the Secretary, Dr. F. Jean Winter, at 284 Regent's Park Road, N.3, would welcome anything in the way of donations to help on the good work. A tragedy of our modern democracy is that small voluntary bodies doing excellent work of this kind can rarely attract the attention they deserve.

In Britain Now: Planning the Army's Future

BRITISH ARMY POST-WAR ORGANIZATION was discussed at a meeting held at Camberley Staff College, Surrey, on October 10, 1945. Field-Marshal Lord Alanbrooke, C.I.G.S., in the chair (1); Lt.-Gen. Sir Kenneth Anderson, G.O.C.-in-C. East Africa (2); Lt.-Gen. Sir John Swayne, C.G.S. India (3); Lt.-Gen. Sir William Green, C.-in-C. Anti-Aircraft Command (4); Lt.-Gen. Sir Frank Messervy, commanding 4th Corps (5); Lt.-Gen. Sir Daril Watson, C.-in-C. Western Command (6); Field-Marshal Sir Bernard Montgomery (7); Gen. Sir Thomas Riddell-Webster, Q.-M.-General to the Forces (8).

TROOPS AT THE DOCKS, many of them specially brought from Germany, helped to unload London's meat ration—threatened as a result of the dockers' strike which extended to the Metropolis on October 10, 1945. Five days later over 6,000 soldiers were assisting in this urgent task all over the country, so that food-ships could be quickly turned round.



SALVAGED STEEL from the Norwegian whale-factory ship Ole Wegger, sunk off the Normandy beaches as a block-ship during the D-Day landings, was unloaded at Southampton docks. Metal from these salvaged ships will either be melted down or reconditioned. See also pages 426-427.

Photos, Associated Press, Planet, G.P.U.

Danes Help to Gather Our Rich Sea Harvest

ONE OF MANY MANNED BY DANES, and operating under British registration, the LO 265 lay at Lancashire's famous port of Fleetwood in mid-October 1945. Known as "sailers," the Danish fishing boats are larger than the equivalent British craft and they sail in deeper waters: some have been known to fare as far as Iceland. In the foreground are two British prawners, with the lines and rigging of a racing yacht. Since early in 1944 Danish seamen have helped to operate H.M. motor minesweepers.

Photo, E. W. Tattersall

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